

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

Tuesday, February 27, 2007

REPAY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Vic Stirnaman Executive Vice President Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641-0002

Re: Corrective Measures Completion Report Keystone Steel & Wire Company EPA ID No. ILD 000 714 881

Dear Mr. Stirnaman

The U.S. EPA received your October 25, 2006 response to our September 26, 2006 letter. The October 2006 response and comments were provided by your contractor ENTACT. The U.S. EPA agrees with your comments and your strategy for revising the Keystone Corrective Measures Completion Report (CMCR). The revised CMCR report should be submitted to U.S. EPA for review within 30 days of receipt of this letter. The U.S. EPA also received your October 2006 Quarterly Groundwater Monitoring Letter Report dated February 5, 2007. This document is currently under review. At the conclusion of our review, the U.S. EPA will forward all applicable comments to you.

If you have any questions regarding this matter, please contact Jonathan Adenuga at (312) 886-7954.

at (312) 800-79:

Sincerely,

Jonathan Adenuga

Waste Pesticides and Toxics Division

Cc: Chad Erdmann, KS&W
Cc: Jim Moore, IEPA

US EPA RECORDS CENTER REGION 5



October 25, 2006

Mr. Jonathan Adenuga U.S. EPA Region 5, DE-9J 77 W. Jackson Boulevard Chicago, Illinois 60604-3507

RE: Corrective Measures Completion Report Keystone Steel & Wire Company 7000 SW Adams Street, Peoria, Illinois EPA ID No. ILD 000 714 881

Dear Jonathan:

On behalf of the Keystone Consolidated Industries, Inc d/b/a Keystone Steel & Wire Company ("Keystone"), ENTACT Services LLC ("ENTACT") is transmitting the attached responses to the U.S. Environmental Protection Agency's (the "U.S. EPA") comments dated September 26, 2006 to Keystone's Corrective Measures Completion Report. For reviewing convenience, the U.S. EPA's comments are also provided, followed by ENTACT's corresponding response in italicized type. A revision to the Corrective Measures Completion Report will be submitted to the U.S. EPA for approval upon acceptance of the attached responses to the U.S. EPA's comments.

If you have any questions or concerns regarding this submittal, please feel free to contact me at (972) 580-1323 or Chad Erdmann with Keystone at (309) 697-7165.

Respectfully,

Thad Slaughter

ENTACT Services LLC

cc: Chad Erdmann, Keystone Steel & Wire Company

for

Jim Moore, IEPA

George Hamper, USEPA

Andrew Running, Kirkland & Ellis

Pierce Marshall, on behalf of Keystone Steel & Wire Co.

Kevin Lombardozzi, on behalf of Keystone Steel & Wire Co.

Russ Perry, on behalf of Keystone Steel & Wire Co.

Bert Downing, Keystone Consolidated Industries, Inc.

ENTACT's Responses to the U.S. EPA Comments Dated September 26, 2006 Regarding the Corrective Measures Completion Report (the "CMCR") and the CMCR Addendum for the Keystone Steel & Wire Co. Facility in Peoria, Illinois

I. GENERAL COMMENTS ON THE CMCR

U.S. EPA Comment No. 1: The CMCR should include additional figures of the F-Pond and NDSA. Figures showing the grid layouts, confirmatory sampling locations, and reported exceedance locations in each area should be added to the CMCR figures section. Figures 1 and 2 from the Field Sampling Plan in the Corrective Measures Implementation (CMI) Workplan should be used as the basis for construction of these figures. It is also recommended that the figures provided in Appendix D be moved to the main body of the report for easier reference.

ENTACT Response: An additional figure of the NDSA that depicts the grid locations, excavation limits and post-excavation confirmation sample locations and the results for the initial and final excavation has been added to the figures section of the CMCR (refer to the response to Comment no. 5). There are no exceedances of the remediation goals in either the NDSA or F-Pond after the completion of the corrective measures, thus additional figures that would depict this have not been provided as requested. The drawings provided in Appendix D of the CMCR have been added to the figures section and the appendices have been renumbered to reflect the removal of the drawings from Appendix D.

U.S. EPA Comment No. 2: Tables provided in the CMCR routinely omit the data qualifier "J', which is used to indicate that data have been estimated. Data qualifiers are typically included in these types of tables because they provide an indication of data reliability and confirmation that the data have been validated. Revise the tables accordingly to include all appropriate qualifiers.

ENTACT Response: The tables in the CMCR have been revised to reflect this Comment.

II. SPECIFIC COMMENTS ON THE CMCR

Section 2.2.5, F-Pond Excavation

U.S. EPA Comment No. 3: While Section 2.2.5 indicates that Paint Filter Liquids Test results are provided in Appendix B, it is recommended that a brief statement be added to the text that indicates whether stabilization efforts were successful. Revise the text in Section 2.2.5 accordingly.

ENTACT Response: Section 2.2.5 of the CMCR has been revised to reflect this Comment.

U.S. EPA Comment No. 4: The first sentence of this section lists the F-Pond grids from which impacted soil and sediment was excavated during the CMI. Grid 14 (with a reported lead level of 9,500 milligrams per kilogram (mg/kg)) has not been included. A review of Table 2, however, indicates that post-excavation samples were collected from Grid 14. Based on this

determination, it appears that Grid 14 was inadvertently omitted from the list of F-Pond excavation grids. Revise the first sentence as appropriate.

ENTACT Response: Section 2.2.5 of the CMCR has been revised to reflect this Comment.

Section 2.3.4, NDSA Excavation

U.S. EPA Comment No. 5: A review of the laboratory reports in Appendix A revealed that a confirmation sample was collected from the south sidewall of Grid A4 (sample ECS-ND-A4-SWS-001-2') from laboratory report number PDC 6021467). Furthermore, the lead concentration measured in this confirmation sample (1,100 mg/kg) exceeded the remediation goal of 800 mg/kg. These data were not provided in Table 2, apparently because this sample was not a formal sampling point from the CMI Workplan. Nevertheless, the exceedance was reported and should be included with the remaining data. Because no follow-up confirmation sampling data were found in the laboratory reports and no additional discussion is provided, it is unclear whether additional excavation was completed and impacted soil was successfully removed from Grid A4. Revise the report to clarify the status of this exceedance area. Furthermore, the CMCR should be revised to discuss the implications of this detection as it pertains to achieving overall remediation goals at the NDSA (e.g., could other exceedance areas be present at the NDSA, was the sampling program sufficiently representative and widespread to identify all exceedance areas, is Keystone confident that remediation goals have been met across the entire NDSA, what is the justification for that determination, should additional excavation have been performed, have the corrective measures been implemented appropriately).

ENTACT Response: The initial area of excavation in the NDSA consisted of the two areas depicted on Figure 2 of the Field Sampling Plan included in the CMI Workplan, Revision 2.0 and the space in between these areas to a depth of 1 foot below ground surface (bgs) for access purposes. At the completion of initial excavation, post-excavation confirmation samples, including sample ECS-ND-A4-SWS-001-2', were collected from the general locations depicted on this figure. The results of these post-excavation confirmation samples indicated that the remediation goals had not been achieved at all sample locations. Thus, additional excavation, where necessary in the horizontal and vertical directions, was performed and is referred to as the final excavation for the purposes of this response. This final excavation included the excavation of soils located in the space between the two excavation areas to a depth of 3 feet bgs. Because the previously sampled sidewall, represented by sample ID ECS-ND-A4-SWS-001-2', was no longer present after the completion of the final excavation, a post-excavation confirmation sample of the bottom of the excavation in the location of the previous sidewall was collected and was labeled as sample ID ECS-ND-A3-SWS-002-3'. A figure has been included in the figures section of the revised CMCR that depicts the boundaries of the initial and final excavations and the associated post-excavation confirmation sample locations and results for clarification purposes. The final post-excavation confirmation samples indicated that the remediation goals had been achieved at all sample locations.

Section 2.3.7, NDSA Groundwater Monitoring

U.S. EPA Comment No. 6: According to Section 3.3.8 of the approved CMI Workplan (Revision 2), two new monitoring wells were to be installed north and southwest of the NDSA footprint. A review of CMCR Figure 3 indicates that well NDSA-1 was installed in the appropriate approximate location, but new well NDSA-2 was installed within and on the western edge of the footprint of the NDSA, rather than north of the area. Concern over the specific location of this well is further heightened after review of groundwater elevations and the eastward flow direction reported for the NDSA in the CMCR Addendum. With flow moving east, samples collected from well NDSA-2 will largely be indicative of upgradient groundwater quality. Revise the text to justify this discrepancy and its impact on groundwater monitoring of the NDSA. The text should specifically discuss the ability of the existing well network to document potential groundwater quality downgradient of the NDSA. Finally, Figure 3 should be modified to include existing NDSA wells T-6A and W-2.

ENTACT Response: The monitoring wells were installed as close as possible to the footprint of the NDSA in the north and southwest directions per the U.S. EPA's request during CMI Workplan development. Monitoring well NDSA-2 was in fact installed outside of the limits of the NDSA on the north side. It appears that the location of the NDSA in relation to these monitoring wells was incorrectly represented on Figure 3. Thus, this figure has been revised to show the correct location of the NDSA and monitoring wells NDSA-1 and NDSA-2. The figure has also been revised to depict the locations of monitoring wells T-6A and W-2.

Regarding the ability of the well network to document groundwater quality downgradient of the NDSA, the monitoring wells were installed at their locations based on a groundwater gradient map for the facility. This map indicated that the general groundwater flow direction for this portion of the facility was towards the north-northeast.

Additionally the NDSA is within the limits of the designated Groundwater Management Zone (the "GMZ") being implemented pursuant to an Agreed Order on Consent with the Illinois EPA. Groundwater within this zone is currently extracted from four large pumping wells and treated before discharge. This GMZ was established due to the current extent of groundwater contamination in the area related to the presence of chlorinated organic compounds in the groundwater. The terms "up gradient" and "down gradient" really have little meaning for this unit since the groundwater gradients are artificial and will remain artificial for as long as the GMZ is in existence. Currently the groundwater flow in the area is artificially depressed and groundwater in the GMZ flows radially towards one of the four pumping wells.

U.S. EPA Comment No. 7: As outlined in Section 3.3.8 of the approved CMI Workplan (Revision 2), groundwater monitoring at the NDSA was to include the two new wells (NDSA-1 and NDSA-2) and existing wells T-6A and W-2. The CMCR text indicates that new wells were sampled on July 13, 2006. The text should be clarified to note that the two existing wells were also sampled.

ENTACT Response: Section 2.3.7 of the CMCR has been revised to reflect this Comment.

Table 1, Characterization Sample Analytical Results

U.S. EPA Comment No. 8: The detection of lead at F-Pond Grid 32 (sample CS-F-32-001-0.5) should also be highlighted as an exceedance because the detected concentration of 900 mg/kg exceeds the remediation goal of 800 mg/kg.

ENTACT Response: Table 1 of the CMCR has been revised to reflect this Comment.

Table 2, Post-Excavation Confirmation Sample Analytical Results

U.S. EPA Comment No. 9: Two minor data errors were identified in Table 2. Revise Table 2 to indicate that the TCLP lead result recorded for the NDSA Grid A5/ND-3 sample location (sample ECS-ND-A5-ND3-001-2') was 0.065 milligrams per liter (mg/l), rather than some value less than this concentration. In addition, the detected lead concentrations in the F-Pond Grid 14 bottom confirmation sample (sample ECS-F-14-01-2) should be listed as 9.1 mg/kg, rather than 9 mg/kg.

ENTACT Response: Table 2 of the CMCR has been revised to reflect this Comment.

Table 4, Common Fill, Topsoil Sample Analytical Results

U.S. EPA Comment No. 10: For accuracy and consistency with lab reports provided in Appendix A, this table should be corrected to show a detection limit of 630 micrograms per kilogram (ug/kg), rather than 500 ug/kg, for gasoline range total petroleum hydrocarbons.

ENTACT Response: Table 4 of the CMCR has been revised to reflect this Comment.

III. GENERAL COMMENTS ON THE CMCR ADDENDUM

U.S. EPA Comment No. 11: As indicated on pages 2 and 3 of the CMCR Addendum, elevated total lead concentrations were reported both upgradient of and sidegradient to the F-Pond. Total lead concentrations of 13 and 11,000 micrograms per liter (ug/l) were reported in upgradient well FP-1 and sidegradient well TL4-R, respectively. Both of these detections exceed the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) Tier I Groundwater Remediation objectives (GRO) of 7.5 ug/l for lead in Class I groundwater, and the concentration at well TL4-R exceeds the TACO Tier I GRO of 100 ug/l for lead in Class II groundwater. Well FP-2, located downgradient of the F-Pond, did not report detectable concentrations of total lead. Keystone should expand the CMCR Addendum to discuss and provide possible explanations for the unexpected analytical results upgradient and sidegradient to the F-Pond. Keystone should specifically consider the possibility of an as yetunidentified source of lead contamination northeast of the F-Pond. Future monitoring results should be closely evaluated to confirm or dispute this interpretation and give an accurate portrayal of the nature and extent of lead contamination in the vicinity of the F-Pond. If these results and interpreted groundwater flow directions are confirmed during the October 2006 sampling event, additional investigation will likely be required.

As indicated in the May groundwater data, the turbidity (NTU) results range from 14.7 to 5,999 and the July data range from 3 to 175. The U.S. EPA guidance document requires a NTU of 10 for all groundwater samples collected for analysis. KS&W needs to explain the source of lead in the turbid sediments. Provide soil sample results collected from these monitoring wells.

ENTACT Response: The use and references to the May groundwater sampling data as part of the U.S. EPA's comment is a surprise. ENTACT and Keystone indicated that the groundwater samples from the May groundwater event samples were obtained before the wells were developed. Thus, the data from the analyses of the samples are not usable for the purpose of evaluating the representativeness of the aquifer conditions in the vicinity of the sampled wells. With this understanding, ENTACT's response will only be related to the data collected during the July sampling event.

ENTACT is in agreement with the U.S. EPA that the sampling results from these two wells should be closely evaluated in an effort to verify the representativeness of the true aquifer condition during the July sampling event with respect to releases from the F-Pond. Based on this single sample event, ENTACT is hesitant to speculate on the potential reason(s) for the elevated lead contamination in the groundwater collected from the wells and the elevated pH found in monitoring well TL4-R.

Additional sampling events will be helpful in ascertaining if the elevated lead and pH is an artifact of the sampling collection technique and/or well completion activities, or the result of an elevated dissolved lead fraction from a source at or near the wells. ENTACT would like to review the data from the October sampling event before proposing any additional activities needed to verify the presence or absence of the dissolved lead in the sampled aquifer.

With these limitations, the most probable source of the lead is from the fines that were entrained with the water collected from the wells and/or from the material that is located within the monitoring well screened interval. The level of fines in the groundwater samples appears to be directly related to the level of turbidity measured in each groundwater sample. Typically, elevated lead concentrations, if present, are found with the fine fraction of soils and sediments. Because of the low recharge conditions of the aquifer in the screened wells, a bailer was used to collect the groundwater samples. The use of a bailer and the low recharge of the aquifer, all can contribute to the high turbidity in the wells and thus, the elevated lead concentrations found in groundwater.

With respect to the requested soil sample results from these monitoring wells, soil samples were not collected from these wells. A lithological description of the material encountered during the installation of the monitoring wells is contained in Appendix F of the CMCR.

IV. SPECIFIC COMMENTS ON THE CMCR ADDENDUM

Table 2, Field Parameter and Laboratory Analytical Results for Groundwater Samples

U.S. EPA Comment No. 12: For ease of comparison, this table and similar tables in subsequent monitoring reports should be expanded to include groundwater quality criteria (i.e., IEPA TACO

Tier I GROs) that will be used to screen detected total lead concentrations and determine the need for additional corrective measures.

ENTACT Response: Table 2 of the CMCR has been revised to reflect this Comment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

September 26, 2006

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Vic Stirnaman Executive Vice President Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641-0002

Re: Corrective Measures Completion Report Keystone Steel & Wire Company EPA ID No. ILD 000 714 881

Dear Mr. Stirnaman

The U.S. EPA received your July 31, 2006 Corrective Measures Completion Report (CMCR) and the September 8, 2006 Addendum to the CMCR for the F-Pond and the North Ditch Staging Area at the Keystone Steel & Wire (KS&W) Company. We have reviewed this report and determined that the construction of the corrective measures described in our October 19, 2005 Final Decision and Response to Comments has been completed. The enclosure provides comments on the CMCR. Addressing these comments will clarify the CMCR.

Based on the post-excavation confirmation sampling results for the soils and wastes present in the F-Pond, the North Ditch Staging Area and the groundwater sampling results, we are unable to conclusively state that the employed treatment method was successful. Groundwater samples collected from monitoring wells FP-1, FP-2, TL4_R, NDSA-1, T-6A and W-2 on July 13, 2006 for the purpose of demonstrating no impact to the underlying groundwater, revealed elevated lead concentrations in the groundwater at monitoring well TL4-R. Prior to the July 13, 2006 groundwater sampling episode and the submission of the Addendum to the CMCR, KS&W in May 2006, collected groundwater samples from the same monitoring wells listed above. KS&W claims that the May 2006 sampling was an inadvertent sampling episode. The U.S. EPA has evaluated the May and July 2006 groundwater data collectively to determine the integrity of the monitoring wells and efficacy of the already completed treatment process at the F-Pond and the North Ditch Staging Area.

Based on the groundwater results in the CMCR, releases to the groundwater our groundwater cleanup goals have not been met. As you correctly stated in the addendum to the CMCR, Section 3.2.9 of the Corrective Measures Implementation workplan requires one full year of quarterly groundwater monitoring to demonstrate that groundwater has not been impacted. Therefore, at the end the scheduled one year groundwater monitoring, if any of the monitoring wells listed above or any new wells installed as replacements continues to show elevated levels for lead or any other hazardous constituents, KS&W shall submit a new corrective action workplan to U.S. EPA to address the elevated lead levels or these hazardous constituents. We hope that the groundwater contamination will dissipate quickly now that sources have been controlled. However, it is possible

that additional construction might be needed after the one-year period. The comments in the enclosure must be addressed within 30 days of receipt of this letter.

If you have any questions regarding this matter, please contact Jonathan Adenuga at (312) 886-7954.

onathan Adenuga

Sincerely,

Waste Pesticides and Toxics Division

Cc: Chad Erdmann, KS&W
Cc: Jim Moore, IEPA

ATTACHMENT

JULY 2006 CORRECTIVE MEASURES COMPLETION REPORT (CMCR) AND SEPTEMBER 2006 CMCR ADDENDUM

KEYSTONE STEEL AND WIRE PEORIA. ILLINOIS

I. GENERAL COMMENTS ON THE CMCR

- 1. The CMCR should include additional figures of the F-Pond and NDSA. Figures showing grid layouts, confirmatory sampling locations, and reported exceedance locations in each area should be added to the CMCR figures section. Figures 1 and 2 from the Field Sampling Plan in the Corrective Measures Implementation (CMI) Work Plan should be used as the basis for construction of these figures. It is also recommended that the figures provided in Appendix D be moved to the main body of the report for easier reference.
- Tables provided in the CMCR routinely omit the data qualifier "J", which is used to indicate that data have been estimated. Data qualifiers are typically included in these types of tables because they provide an indication of data reliability and confirmation that the data have been validated. Revise the tables accordingly to include all appropriate qualifiers.

II. SPECIFIC COMMENTS ON THE CMCR

Section 2.2.5, F-Pond Excavation

- 3. While Section 2.2.5 indicates that Paint Filter Liquids Test results are provided in Appendix B, it is recommended that a brief statement be added to the text that indicates whether stabilization efforts were successful. Revise the text in Section 2.2.5 accordingly.
- 4. The first sentence of this section lists the F-Pond grids from which impacted soil and sediment was excavated during the CMI. Grid 14 (with a reported lead level of 9,500 milligrams per kilogram [mg/kg]) has not been included. A review of Table 2, however, indicates that post-excavation samples were collected from Grid 14. Based on this determination, it appears that Grid 14 was inadvertently omitted from the list of F-Pond excavation grids. Revise the first sentence as appropriate.

Section 2.3.4, NDSA Excavation

5. A review of the laboratory reports in Appendix A revealed that a confirmation sample was collected from the south sidewall of Grid A4 (sample ECS-ND-A4-SWS-001-2' from laboratory report number PDC 6021467). Furthermore, the lead concentration measured in this confirmation sample (1,100 mg/kg) exceeded the remediation goal of 800 mg/kg. These data were not provided in Table 2, apparently because this sample was not a formal sampling point from the CMI Work Plan. Nevertheless, the exceedance was reported and should be included with the remaining data. Because no follow-up confirmation sampling data were found in the laboratory reports and no additional discussion is provided, it is

micrograms per kilogram $(\Phi g/kg)$, rather than 500 $\Phi g/kg$, for gasoline-range total petroleum hydrocarbons.

III. GENERAL COMMENTS ON THE CMCR ADDENDUM

As indicated on pages 2 and 3 of the CMCR Addendum, elevated total lead 1. concentrations were reported both upgradient of and sidegradient to the F-Pond. Total lead concentrations of 13 and 11,000 micrograms per liter (µg/L) were reported in upgradient well FP-1 and sidegradient well TL4-R, respectively. Both of these detections exceed the Illinois Environmental Proetction Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) Tier I Groundwater Remediation Objective (GRO) of 7.5 µg/L for lead in Class I groundwater, and the concentration at well TL4-R exceeds the TACO Tier I GRO of 100 μg/L for lead in Class II groundwater. Well FP-2, located downgradient of the F-Pond, did not report detectable concentrations of total lead. Keystone should expand the CMCR Addendum to discuss and provide possible explanations for the unexpected analytical results upgradient of and sidegradient to the F-Pond. Keystone should specifically consider the possibility of an asyet-unidentified source of lead contamination northeast of the F-Pond. Future monitoring results should be closely evaluated to confirm or dispute this interpretation and give an accurate portrayal of the nature and extent of lead contamination in the vicinity of the F-Pond. If these results and interpreted groundwater flow directions are confirmed during the October 2006 sampling event, additional investigation will likely be required.

As indicated in the May groundwater data, the turbidity (NTU) results range from 14.7 to 5,999 and the July data range from 3 to 175. The U.S. EPA guidance document requires a NTU of 10 for all groundwater samples collected for analysis. KS&W needs to explain the source of lead in the turbid sediments. Provide soil samples results collected from these monitoring wells.

IV. SPECIFIC COMMENTS ON THE CMCR ADDENDUM

Table 2, Field Parameter and Laboratory Analytical Results for Groundwater Samples

12. For ease of comparison, this table and similar tables in subsequent monitoring reports should be expanded to include groundwater quality criteria (i.e., IEPA TACO Tier I GROs) that will be used to screen detected total lead concentrations and determine the need for additional corrective measures.



3129 Bass Pro Drive Grapevine, Texas 76051

September 8, 2006

Mr. Jonathan Adenuga U.S. EPA Region 5, DE-9J 77 W. Jackson Boulevard Chicago, Illinois 60604-3507

RE: Addendum to Corrective Measures Completion Report

Keystone Steel & Wire Company 7000 SW Adams Street, Peoria, Illinois

Dear Jonathan:

On behalf of the Keystone Steel & Wire Company, ENTACT Services LLC (ENTACT) is submitting this Addendum to the Corrective Measures Completion Report dated July 31, 2006. This Addendum discusses the groundwater monitoring results from the July 13, 2006 sampling of the groundwater monitoring wells. This sampling event was required as part of the corrective measures implemented at the F-Pond and North Ditch Staging Area. The following sections describe the monitoring well development procedures, sampling procedures, field parameter results, and laboratory analytical results for the July 13, 2006 sampling event.

Groundwater Monitoring Event

Groundwater samples were collected by Keystone's groundwater monitoring consultant, EarthTech, from groundwater monitoring wells FP-1, FP-2 and TL4-R at the F-Pond and groundwater monitoring wells NDSA-1, NDSA-2, W-2, and T-6A at the North Ditch Staging Area on July 13, 2006 (see Figure 1 for the location of these monitoring wells). Groundwater samples were previously collected from these groundwater monitoring wells on May 8, 2006, shortly after installation of monitoring wells FP-1, FP-2, TL4-R, NDSA-1, and NDSA-2. It was discovered that these wells had not been developed after installation and prior to the May 8, 2006 sampling event. Due to the lack of well development prior to sampling, the analytical results indicated elevated concentrations of total lead in the groundwater resulting from the suspended matter present in the water column. Because the May 8, 2006 results were not representative of the actual groundwater conditions, the monitoring wells were resampled by EarthTech on July 13, 2006. Prior to this resampling event, the monitoring wells were properly developed.

Development Procedures

The newly installed monitoring wells, FP-1, FP-2, TL4-R, NDSA-1, and NDSA-2, were developed by overpumping or by hand surging and bailing techniques. Development focused on removing sediment introduced into the monitoring wells during well installation. The monitoring wells were considered developed once the development water removed from the well became less turbid. Approximately 20 gallons of groundwater were removed from monitoring wells NDSA-1 and FP-2 by overpumping and approximately 15 gallons of groundwater were removed from monitoring wells FP-1 and TL4-R by hand surging and bailing. Due to poor recovery at monitoring well NDSA-2, limited well development was

Mr. Jonathan Adenuga September 8, 2006 Page 2

achieved at this location by surging the well and bailing the well dry. The monitoring well was allowed to recover and then the cycle was repeated. Approximately 3 gallons of groundwater were removed from monitoring well NDSA-2. The development water was containerized and transferred to the groundwater monitoring zone treatment system, which ultimately connects to the facility's wastewater treatment system, for disposal.

Sampling Procedures

Prior to sampling, water level measurements were taken at each monitoring well with an electronic water level measuring device to determine the depth to groundwater. The calculated static water table elevations were then used to construct a groundwater gradient map for the F-Pond and North Ditch Staging Area. From this data, it was determined that the groundwater flow direction and gradient at the F-Pond was to the southwest at 0.003 feet/foot and to the east-northeast at 0.01 feet/foot at the North Ditch Staging Area. A summary of the water level measurements is presented on Table 1 and the groundwater gradient/flow direction and elevations are presented on Figure 1.

After measurement, the monitoring wells were purged and sampled using clean disposable bailers. The depth to groundwater information collected was also used to determine the amount of groundwater required to be removed from each well prior to sampling. At least three well volumes were removed by hand bailing or the monitoring well was bailed dry and allowed to recover prior to collecting a sample. Monitoring well NDSA-2 was bailed dry prior to obtaining three well volumes and was allowed to recover prior to sampling.

Groundwater samples were then collected from each monitoring well and were submitted for laboratory analysis of total and dissolved lead by U.S. EPA Method SW-846 6010B. The samples from each monitoring well were collected in two 500 ml plastic containers and preserved with nitric acid. A 0.45 micron filter was used to filter a separate aliquot sample for dissolved lead. A separate aliquot sample was also collected from each monitoring well for field measurements of temperature, pH, conductivity, and turbidity (see Table 1 for the field parameter results). The samples were placed in a cooler with ice under chain-of-custody. The samples were picked up by a laboratory courier for delivery to PDC's laboratory in Peoria, Illinois. The purge water was containerized and transferred to the groundwater monitoring zone treatment system, which ultimately connects to the facility's wastewater treatment system, for disposal.

Analytical Results

The laboratory analytical results indicate that total and dissolved lead concentrations were below the laboratory detection limit of 5 parts per billion (ppb) in monitoring wells FP-2, NDSA-1, NDSA-2, T-6A, and W-2. Total lead was detected in monitoring well FP-1, located upgradient of the F-Pond, at a concentration of 13 ppb; however, this detection is below the Federal drinking water standard of 15 ppb.

Total and dissolved lead were also detected in monitoring well TL4-R at concentrations of 11,000 ppb and 8,800 ppb, respectively. This monitoring well replaced monitoring well TL-4 that was initially installed as part of the Environmental Indicators Assessment Investigation conducted in September 2001. Monitoring well TL4-R was installed in the vicinity of monitoring well TL-4 within the limits of the F-

Mr. Jonathan Adenuga September 8, 2006 Page 3

Pond and sidegradient to the groundwater flow direction in the area. The elevated lead concentrations in the groundwater at monitoring well TL4-R were also accompanied by an unusually high pH of 11.4. The laboratory analytical results are presented on Table 1 and the laboratory analytical report is included as Attachment 1.

Conclusions

Per the requirements of Sections 3.2.9 and 3.3.8 of the *Corrective Measures Implementation Workplan*, *Revision 2.0* dated April 17, 2006, groundwater monitoring will continue on a quarterly basis for a period of one year. The next groundwater monitoring event will be scheduled for late October 2006.

If you have any questions or concerns regarding this addendum, please feel free to contact me at (972) 580-1323 or Chad Erdmann with Keystone at (309) 697-7165.

Respectfully,

Jenny Elste, P.G.

ENTACT Services LLC

Attachments

cc:

Chad Erdmann, Keystone Steel & Wire Company

Jim Moore, IEPA

Thad Slaughter, ENTACT Services, LLC

TABLE 1 Water Level Measurements for Groundwater Monitoring Wells F-Pond and North Ditch Staging Area Keystone Steel & Wire Peoria, Illinois

Monitoring Well ID No.	Installation/ Sample Date	Ground Elevation (ft amsl)	TOC Elevation (ft amsl)	Standpipe Stickup (+) Stickdown (-)	Depth to Water (ft from gs)	Depth to Water (ft from TOC)	Water Elevation (ft amsl)
FP-1	05/02/06	450.75	453.25	+2.5			
FF-1	07/13/06			\$ 1 m	9.94	12.44	440.81
FP-2	05/03/06	443.54	446.04	+2.5	· · · · · · · · · · · · · · · · · · ·	***	
FF-2	07/13/06	· e.			4.72	7.22	438.82
TL4-R	05/03/06	448.95	451.45	+2.5			
I L4-M	07/13/06	MANAGE			9.53	12.03	439.42
NDSA-1	05/02/06	449.67	449.67	0	* * * * * * * * * * * * * * * * * * * *		
ND9A-1	07/13/06			· ·	9.08	9.08	440.59
NDSA-2	05/02/06	448.62	448.62	0			
NDSA-2	07/13/06				9.87	9.87	438.75
TCA	11/06/89	449.10	451.67	2.57		San Company of San	\$ / \
T-6A	07/13/06				8.30	10.87	440.8
W-2	01/15/86	448.60	451.79	3.19			a Victoria de la constanta de
vv-2	07/13/06	_			9.61	12.80	438.99

TABLE 2

Field Parameter and Laboratory Analytical Results for Groundwater Samples F-Pond and North Ditch Staging Area Keystone Steel & Wire Peoria, Illinois

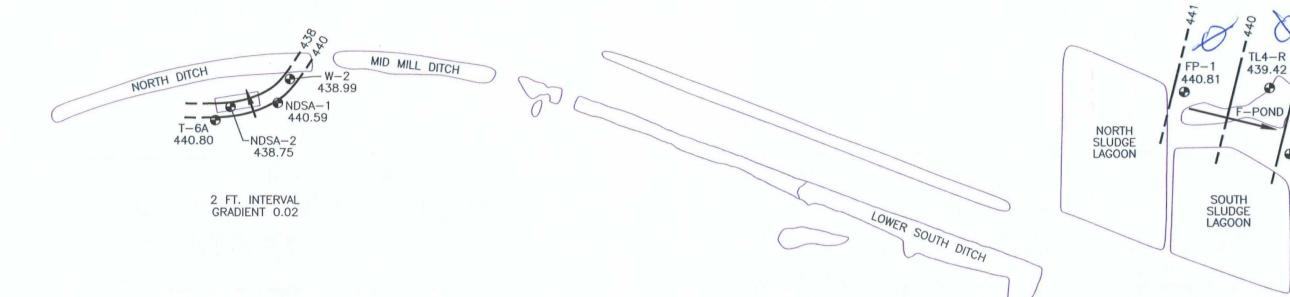
	F-	Pond MV	Vs	North Ditch Staging Area MWs						
Parameters	FP-1 07/13/06	FP-2 07/13/06	TL4-R 07/13/06	NDSA-1 07/13/06	NDSA-2 07/13/06	T-6A 07/13/06	T-6A (Dup-0713) 07/13/06	W-2 07/13/06		
Lead, Total (μg/L)	13	<5	11,000	<5	<5	<5	<5	<5		
Lead, Dissolved (µg/L)	<5	<5	8,800	<5	<5	<5	<5	<5		
pH (s.u.)	7.58	6.05	11.41	5.46	5.98	5.67	5.57	5.81		
Conductivity (mS/cm)	1.94	2.27	5.43	0.95	0.99	1.29	1.32	1.45		
Tubidity (NTU)	175 🗸	118 🗸	120 🗸	15	3	15	26	106		
Temperature (°C)	21.1	20.3	21.4	20.3	20.3	19.0	19.7	20.3		

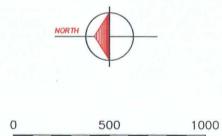
Notes:

<: Less than the detection limit

1-FT. INTERVAL GRADIENT 0.003

438.82





FEET

LEGEND

MONITORING WELL

440.59 GROUND WATER ELEVATION (FEET MSL)

GROUND WATER ELEVATION CONTOUR

GROUND WATER FLOW DIRECTION

GROUND WATER FLOW AT NDSA AND F-POND AREAS JULY 13, 2006

KEYSTONE STEEL & WIRE COMPANY PEORIA, ILLINOIS

Date 08-06	
	Figur
Project No.	1
95150	,



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



August 16, 2006

Mr. Andy Duwelius Earth Tech 5010 Stone Mill Road Bloomington, IN 47408

Dear Mr. Duwelius:

Enclosed is the quality control deliverables for the July 13, 2006 groundwater sampling event at Keystone Steel & Wire. If you have any questions, please call.

Sincerely,

PDC LABORATORIES, INC.

Schrindler

Gail J. Schindler

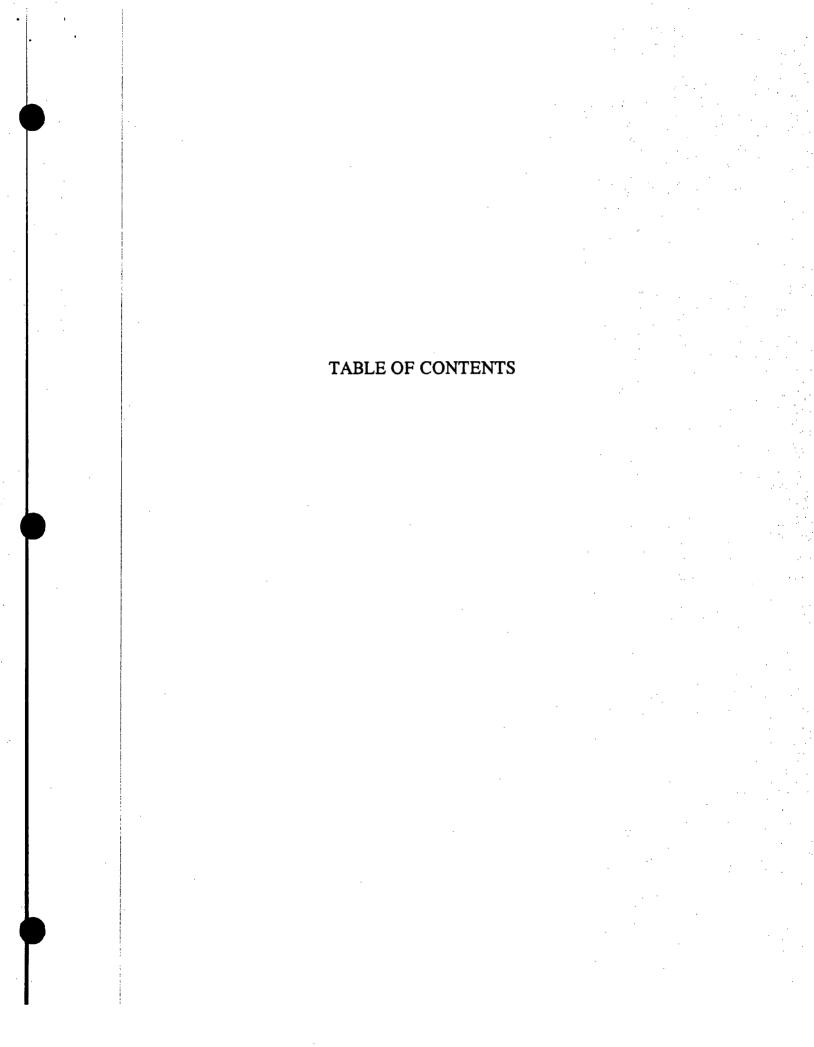
Project Manager

EARTH TECH BLOOMINGTON, IN

KEYSTONE STEEL & WIRE CO. PROJECT 82781.02

SAMPLING EVENT: JULY 13, 2006

REPORT DATE: AUGUST 16, 2006





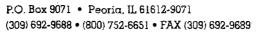




TABLE OF CONTENTS

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Total Metals Analyses – Quality Control Documentation		15
Dissolved Metals Analyses - Quality Control Documentation		17

CASE NARRATIVE



P.O. Box 9071 • Peoria, IL 61612-9071 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



To:

Earth Tech

Facility:

Keystone Steel & Wire Company, Project Number 82781.02

INORGANICS CASE NARRATIVE

Seven groundwater samples and one duplicate sample were received on July 13, 2006 for analysis in accordance with our Level II protocol. Samples arrived in good condition with a cooler temperature of 1°C. The samples were analyzed for Lead, Total and Dissolved (SW-846 Method 6010B).

The analysis was performed according to protocol and within the maximum allowable holding times. The samples were analyzed on July 25, 2006.

Matrix spike and matrix spike duplicate was performed on the following sample:

NDSA-2 - Lead, Total

The recoveries for accuracy and precision were within their required QC limits. Recoveries on the other quality control parameters (blanks, controls, verifications, etc.) were within the required QC limits.

Sincerely,

PDC LABORATORIES, INC.

Law of Lehindler

Gail J. Schindler Project Manager

Paraycles pepar

000002

COVER PAGE



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Form 0

INORGANIC ANALYSIS COVER PAGE

Client Sample ID	Lab Sample ID	Date Collected	Final Date Analyzed
W-2	06072515-1	13-Jul-06	25-Jul-06
T-6A	06072515-2	13-Jul-06	25-Jul-06
NDSA-1	06072515-3	13-Jul-06	25-Jul-06
NDSA-2	06072515-4	13-Jul-06	25-Jul-06
FP-1	06072515-5	13-Jul-06	25-Jul-06
FP-2	06072515-6	13-Jul-06	25-Jul-06
TL-4	06072515-7	13-Jul-06	25-Jul-06
Dup-0713	06072515-8	13-Jul-06	25-Jul-06

CHAIN OF CUSTODY

PDC LABORATORIES, INC. 2231 WEST ALTORFER DRIVE PEORIA, IL 61615

CHAIN OF CUSTODY RECORD

PHONE # 309-692-9688 FAX # 309-692-9689

State where samples collected

	ALL HIGI	ILIGHTED ARE	AS <u>MUST</u>	BE COM	PLETED BY (CLIENT (PL	EASE	PRINT)	· (SAM	PLE AC	CEPTA	NCE P	OLICY ON REVE	RSE)	
	PROJECT N		P.O. NUM	(BER	MEANS (300	W		SEC.	311		(FOR LAI	USE ONLY)	
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	PHONE NU	MBER	FAX NUM	BER	DATE S		2	8		J			LOGIN #	U 100	<u>13</u>
	812-536	097Z BI.	<u>2–336</u>	3991	7-13	-06	0109	0	İ	\$	1		LOGGED BY:		[
					MATRIX TY		ء [13		0			LAB PROJ.#		
	Bar of fine				WW-WASTEN DW-DRINKIN GW-BROUNI WWSL-SLUD	VATER G WATER D WATER	12	1 1		M			TEMPLATE: PROJ. MGR.:		I
					NAS-SOLID L'CHT-LEACH		17	2		11	}		PHOU. MGR.:	·	
					OTHER:	·	1 8	1	- 1,	ひ	1				
SAMPLE DESCRIPTIONS AS AS YOU WANT ON REPORT	COULECTED	TAME NA COULECTED	FORMS	LE CAPE COMP	MATRIX	-30(T).E1 (COUNT)	707	0155	9	16			REM	ARKS	
W-2	7-13-06	0925	×		GW	2	×	X							
T-6A	7-13-06	1035	×		GW	2	×	X				·			
NSD NDSA-1	7-13-06	1	×		GW	2	X	X							
NDSA-2		1000	×		GW	2	×	X							
FP-1	7-13-06		×	1	GW	2	X	X							
FP-2	7-13-06	1245	×	\$ 1	GW	2	X	X							
TL-4	2-13-06	1230	X	è.	6W	2	X	X							
Dup-0713	7-13-06	†	X		GW	2	X	X			1				
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	$\overline{\lambda}$														·
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE)	PORMAL RUS	PHONE	RESULTS	NEEDED	•	this area y	ou requ e lempe ou alio	vest that erature b w the lai	the lab outside	notify you	ou, befo range of	re proc 0.1-8.0	at the (ab. By Initialic seeding with analysi 0°C. By not initialing ting regardless of the	s, if	
Z CARL ME LE LA COMMANDE LA CARLA CA		ED BY: (SIGNATI	URE)		<u> </u>		DA	TE		7	COMME	NTS: (F	FOR LAB USE ONLY	0	
							TIA	Æ	10	ノー		·····	 	-1	
RELINCALEHED BY: (SIGNATURE)	DATE RECEIVED BY: (SIGNATURE)						DA	TE	SAN	PLE TE	MPERAT	URE U	IPON RECEIPT		c
Ti di	ME						TIM		SAN	IPLE(S) PER BOT	receiv Tles re	ED ON CEIVE	PRIOR TO RECEIF ICE DIN GOOD CONDITIC	X PAN X PAN	1
		ED AT LAB BY:	VI	· 10	<u></u>	****) [2	306	BOT	TLES FI IPLES R	ECEIVE	ITH AD TIW D	EQUATE VOLUME	OR N OR N OR N Y OR N	
Įπ	ME //	カリッイ	I Ki.	$\wedge II$	Ų.	j	1 100	15-1	(EXI	JLUDES	IYPICA	L FIEL	D PARAMETERS)		·

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TABULATED ANALYTICAL RESULTS



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Report Cover Page

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Attn: Mr. Andy Duwelius

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

This report includes information regarding the following described samples as received by the laboratory and is only valid for the parameters tested. results page(s) not including the cover page(s).

Sample M				Site	page (B7	Locator		ne cover	page (a) .	
				W-2						
06072515	2	82781.0	2	T-6A		KEYSTONE	STEEL			
06072515-	3	82781.0	Ž ijaji ji j	NDSA-1		KEYSTONE	STEEL			
06072515	4	82781.0	2	NDSA-2		KEYSTONE	STEEL			
06072515	5	82781.0	2	FP-1		KEYSTONE	STEEL			
06072515	5	82781.0	2	FP-2	is a second of the second of t	KEYSTONE	STEEL			
06072515	7	82781.0	2	TL-4		KEYSTONE	STEEL			
06072515	8	82781.0	2	DUP-0713		KEYSTONE	STEEL	11.111		

Certified by:

Project Manager

PDC Laboratories, Inc. participates in the following laboratory accreditation/certification/validation and proficiency programs:

Endorsement by the Federal or State Government or their agencies is not implied.

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230

State of Illinois Certification for Bacteriological Analysis in Drinking Water -Lab Registry No. S/B 17553

Drinking Water Certifications: Indiana (C-IL-04); Kansas (E-10338); Kentucky (90058); Missouri (00870); Wisconsin (998284430)

Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998284430)

Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998284430)

UST Certification: Iowa (240)

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Laboratory Results

Earth Tech

5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864 :-

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No:

06072515-1

Client ID:

82781.02 W-2

Site: Locator:

KEYSTONE STEEL

Collect Date:

13-JUL-06 09:25

Lea	METHOD 60168 id id, Dissolved	ָ שׁ	5.0 5.0	ug/l ug/l	25-Jul-06 25-Jul-06	10:38 JVH 09:24 JVH
Sar	mple Preparation				24-Jul-06	06:00 RAC
SW-846 1	1871HOD 3015			•		
	Parameter		Result	üns es	Date	By



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Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No: 06072515-2 Client ID: 82781.02

Site: T-6A

Locator: KEYSTONE STEEL

Collect Date: 13-JUL-06 10:35

Palameter	Res	gult Units	Date	By
9W-846 METHOD 3015	·			
Sample Preparation			24-Jul-06 0	6:00 RAC
SW-846 METHOD 6010B Lead		9 mar/s	WELL THE STATE OF	A SAC
Lead. Dissolved	U 5.0		25-Jul-06 0	



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Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No: 06072515-3 Client ID: 82781.02

Site: NDSA-1

Locator: KEYSTONE STEEL
Collect Date: 13-JUL-06 10:45

							VINTER DE L'ARRESTANT
7//	Parameter		Result	Units	Date		By
W 1000 1000 1000 1000 1000 1000 1000 10	7///40.000000000000000000000000000000000						

CW-846 M	MHOD 3015					·	i
	ole Preparation	1.4565 0038611111.66.1711.7	W - Was Jan 1999	- 1988 B.C. (1984) (1995) (1998)	24-7117-05	06.00	PAC
Sam	ole Preparation	a a data da	The property of the Pro-	Participation of the San Control of the Control of		00.00	o r (distant es de 1)
SW-846 M	STHOD 6010B						
Tan			5.0	ug/1	25-Jul-06	10:50	JVH
near		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			25-Jul-06		JVH
Lead	l, Dissolved	· U	5.0	ug/l	72-00T-00	03:3T	n Au



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Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No:

06072515-4 82781.02

Client ID:

82781.02 NDSA-2

Site: Locator:

KEYSTONE STEEL

Collect Date:

13-JUL-06 10:00

Parameter	Result	Units	Date	Bÿ
SW-846 METHOD 3015	 	- Arranis Auka - Sasasana Sasasana	1 <u>480000011440004</u> 00011	
SW-846 METHOD 6010B		•		
Lea d Lead, Dissolve	 U 5.0 U 5.0	ug/l ug/l	25-Jul-06 25-Jul-06	 Marie and the state of the stat



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Laboratory Results

Barth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No: 06072515-5 Client ID: 82781.02

Site: FP-1

Locator: KEYSTONE STEEL
Collect Date: 13-JUL-06 12:10

Farameter	Repult	Units	Date	By
SW-846 METHOD 3015			:	
Sample Preparation SW-846 METHOD 6010B			24-Jul-06 0	5:00 RAC
Lead	13.	ug/1	25-Jul-06 1	HVL 80:1
Lead, Dissolved	ס.5 ט	ug/l	25-Jul-06 09	9:39 JVH



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Laboratory Results

Barth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

06072515-6 Sample No: Client ID: 82781.02

FP-2 Site:

KEYSTONE STEEL Locator:

Collect Date: 13-JUL-06 12:45

Parameter	Result Unit	3.335.5	Ву
SN-846 METHOD 3015			
Sample Preparation		24-Jul-06 0	6:00 RAC
SW-846 MOTHOD 60108			
Lead Lead. Dissolved	ty 5.0 ug/l ty 5.0 ug/l	25-Jul-06 0	9:43 JVH





PDC Laboratories, Inc.

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Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Attn: Mr. Andy Duwelius

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Sample No: Client ID:

06072515-7 82781.02

TL-4

Site:

Locator:

KEYSTONE STEEL

Collect Date:

13-JUL-06 12:30

Parameter	Result	Units Date	By
SW-846 METEROD 3015		*	
Sample Preparation		24-Jul	-06 06:00 RAC
SW-846 METHOD SOIGB Lead	1 200 200 11000	11641 25 752 763	ລດຂ≋# ວ ຸຂອ
Lead, Dissolved	8800	ug/1 25-Jul-	-06 09:51 JVH





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Laboratory Results

Earth Tech 5010 Stone Mill Road

Bloomington, IN 47408

Date Received: 13-Jul-06 Date Reported: 16-Aug-06

PO #: WN26864

PDC Cust. # : 205746

Login No. 06072515

Attn: Mr. Andy Duwelius

Sample No: Client ID: 06072515-8 82781.02

Site:

DUP-0713

Locator:

KEYSTONE STEEL

Collect Date:

13-JUL-06 12:00

Parameter	Result	Units	Date By
SW-846 MÉTHOD 1015	- 3-cc - 100000 - 100000 -	1 Late 1 1 100000 - 100 00000 110 00000	
Sample Preparation			24-Jul-06 06:00 RAC
SH-846 METHOD 6016B Lead	5.0	ug/l	25-Jul-06 09:57 JVH
Lead, Dissolved	U 5.0	ug/l	25-Jul-06 09:57 JVH
2004, 21002102		- -	

PDC LABORATORIES DATA QUALIFIERS APPLICABLE TO THE "FEDERAL QC" PROGRAM

A	The presence of this analyte was confirmed using a second column but there was a dispanty (> 40% RPD) between the two sets of results with no apparent chromatographic anomalies. The higher of the two results were reported.
В	present in the method blank at
D	Result obtained through analysis of a sample dilution.
E	Concentration exceeds the instrument calibration range.
Н	Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
J	Estimated value; value between the MDL and the RDL.
U	Parameter was analyzed for, but not detected above the reporting limit.

PDC Laboratories, Inc.



TOTAL METALS QUALITY CONTROL DOCUMENTATION

PDC Laboratories Quality Control Summary Report

PROJECT: 06072515

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051) QC CROSS REFERENCE REPORT

Lab I	_										1.0		
	D 	Client	ID Prep.					Analyst			Method	Sampl	e Tag
06072515-	1	1	W-2 WG12	6083	WG12617	5 25-Jul-0	6 10:3			SW-846	6010B		D1:
06072515~		T	-6A WG12	6083		5 25-Jul-0		HVT.		SW-846			D1 : :
06072515-		NDSA	A-1 WG12	6083	WG12617	5 25-Jul-0				SW-846			
06072515-		NDSI	A-2 WG12 P-1 WG12	6083	WG12617	5 25-Jul-0		JVH		SW-846			D1:
06072515- 06072515-	5	FI	P-1 WG12	6083	WG12617	5 25-Jul-0		וועע ו		SW-846			
		FI TI	P-2 WG12	6083	WG12617 WG12617	5 25-Jul-0	6 11:1:	HVL :		SW-846			D10:
06072515~		DUP-01		6083		5 25-Jul-0				SW-846 SW-846			D10:
06072515-	8	ט-פטט	/13 MG12	6000	WG12617	5 25-UUL-(09:3	J VII	٠ .	9#-0#0	60108	•	DI
THOD BLANK					•	•				*			
STROD BUNK			•										
•													
poratory ID: WG12	6083-1	Analysis	s Lot: WGI	26175	Prep Ba	tch: WG126	083	Sample Tag:	D1:1				
	_									٠			
	Analyte	Units	Value	: 	RDL		s Date						
	Lead	UG/L	5.00	,	5.0	25-Jul-06	10:30		•				
									•		•		
ABORATORY CON	TTDOT, SAM	ים. זמ											
DOME COM	INOL OIL.	* 410											
boratory II: WG12	K083-2	Analveie	r tor . Wal	26175	Sample T	acr D1 · 1							
poracory In: worz	0003-2	~uidiy51¢	5 DOC: NG1	.20175	pampie i	ag. Di.i		•				•	
}	Analyte	Unite	Spiked	l Mea	sured *Re	covery	Limit	s Ana	lysis Dat	е			
						104 96		25-J		-			-
	Lead	06/1	226	,	200	104 00	.0-120	25-0	ur-08 10:	⊃%			
													•
<u></u>				_									•
ATRIX SPIKE/M	ATRIX SP	IKE DU	IPLICATI	Ξ								÷	•
ATRIX SPIKE/M	ATRIX SP	IKE DU	PLICATI	Ε									
,					G126175	Sample S	piked:	06072515-4	Site: NI	SA-2	Samı	ole Tac	a: D
ATRIX SPIKE/M		126083-4	Analysis	Lot: W	•	_					Sam		g: D
,	26083-3, WGI	126083-4		Lot: W	Sample	_	MSD	06072515-4 MS MS Rec % Re	D	SA-2 Rec		RPD	g: D
boratory IDs: WG1:	26083-3, WG1	Units	Analysis Amt MS Am	Lot: W	Sample Value	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1:	26083-3, WG1	Units	Analysis Amt MS Am	Lot: W	Sample Value	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1	Analyte	Units UG/L	Analysis Amt MS Am Spiked S	Lot: W	Sample Value	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1	Analyte	Units UG/L	Analysis Amt MS Am Spiked S	Lot: W	Sample Value	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1	Analyte	Units UG/L	Analysis Amt MS Am Spiked S	Lot: W	Sample Value	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
coratory IDs: WG1:	Analyte Lead	Units UG/L BLANK	Analysis Amt MS Am Spiked S	Lot: Wat MSD spiked 556	Sample Value 5.0U	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1:	Analyte Lead	Units UG/L BLANK	Analysis Amt MS Am Spiked S	Lot: Wat MSD spiked 556	Sample Value 5.0U	MS Value Va	MSD	MS MS	D C Lim	Rec its	RPD I	RPD imits	g: D
boratory IDs: WG1:	Analyte Lead IBRATION	Units UG/L BLANK	Analysis Amt MS Am Spiked S 556	Lot: Wint MSD Spiked 556	Sample Value 5.0U	M8 Value Va	MSD lue	MS MS 8 Rec & Re 104 10	D C Lim	Rec its	RPD I	RPD imits	g: D
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PDC Laboratories Quality Control Summary Report

PROJECT: 06072515

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

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Laboratory ID:	WQ126175-6 Ana	alysis Lot: WG	126175	·	
	Analyte Units	Value	RDL	Analysis Date	
	Lead UG/I	5.0U	5.0	25-Jul-06 12:50	
CONTINUING	CALIBRATION VER	IFICATION			
Laboratory ID:	WG126175-1 Analysis	Lot: WG12617	5 Sample 7	Nag: D1:1	
	Analyte Units	Spiked	Measured 4	Recovery Limits	Analysis Date
	Lead UG/I	4000	4000	100 90.0-110	25-Jul-06 10:00
Laboratory ID:	WG126175-3 Analysis	Lot: WG12617	Sample 1	ag: D1:1	•
	Analyte Units	Spiked	Measured 1	Recovery Limits	Analysis Date
	Lead UG/L	4000	4000	100 90.0-110	25-Jul-06 11:36
Laboratory ID:	WG126175-5 Analysis	Lot: WG12617	5 Sample 1	ag: D1:1	•

Lead UG/L 4000 4000 100 90.0-110

Analyte Units Spiked Measured *Recovery Limits Analysis Date

25-Jul-06 12:45

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DISSOLVED METALS QUALITY CONTROL DOCUMENTATION

PDC Laboratories Quality Control Summary Report

PROJECT: 06072515

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

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06072515-1		W -	2	WG12	6156 25-Jul-06	09:24	JVH		6010B
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06072515-4	.	NDSA-	2	WG12	6156 25-Jul-06	09:34	JVH	SW-846	6010B
06072515-5	;	F.P	. +	WGIZ	0130 53*00T-00	03:33	UVA	SW-846	6010B
06072515-6		FP-	2	WG12	6156 25-Jul-06	09:43	JVH	SW-846 SW-846	6010B
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Laboratory ID: WG126	156-3	Analysis	Lot: WG1261	56 Prep	Batch: N/A	Sample	Tag: Dl:1		
-	Analyte	Units	Value	RDL	Analysis	Date			
Lead,	Dissolved	UG/L	0.330	5.0	25-Jul-06	09:15			
LABORATORY CON	TROL SAM	PLE							
Laboratory ID: WG126	156-4	Analysis	Lot: WG1261	56 Sampl	e Tag: D1:1			•	
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Laboratory ID: WG126	156-2	Analys	is Lot: WG1	26156					
	Analyte	Units	Value	RDL	Analysis	Date		•	
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Laboratory ID: WG126	156-6	Analys	is Lot: WG1	26156					
	Analyte	Units	Value	RDL	Analysis	Date			
Lead,	Dissolved	UG/L	0.85J	5.0	25-Jul-06 10	:04			
CONTINUING CAL	IBRATION	VERIFI	CATION						
Laboratory ID: WG126	156-1 An	alysis Lo	t: WG126156	Sample	Tag: D1:1				
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analys	is Date	

4000 4000

Lead, Dissolved UG/L

Client ID Prep. Lot Analysis Lot Analysis Date

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100 90.0-110

25-Jul-06 08:43

Method Sample Tag

D1:1

D1:1

D1:1

D1:1

D1:1

D5:1

D1:1

D1:1

PDC Laboratories Quality Control Summary Report

PROJECT: 06072515

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051) CONTINUING CALIBRATION VERIFICATION

Laboratory IL): WG125	156-5 AII	arysis	TOE: M01261	20 pambre	Tag: DI:I		
		Analyte	Units	Spiked		*Recovery		Analysis Date
	Lead,	Dissolved	UG/L	4000	4000		90.0-110	25-Jul-06 10:00

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Final Corrective Measures Proposal

Keystone Steel & Wire Company

Peoria, Illinois

January 2003

Prepared For Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

U.S. EPA Facility ID No.: ILD 000 714 881

RMT Project Number 16-70400.07



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Section 1 Introduction

1.1 Background

RMT, Inc. (RMT) has prepared this Final Corrective Measures Proposal on behalf of Keystone Steel and Wire Company (Keystone) for its manufacturing facility located in Peoria, Illinois (see Figure 1-1). This Report is being submitted as per requirements established in Section 18 of the December 20, 2000 Administrative Order on Consent (AOC) between Keystone and U.S. Environmental Protection Agency (EPA) Region 5.

The AOC was established as part of EPA's implementation of the Environmental Indicators (EI) program under the Government Performance and Results Act (GPRA), as a follow-up to the original RCRA Facility Assessment (RFA) performed at Keystone in 1987. The 1989 RFA Report identified several areas of potential concern, and five of these areas were targeted for further investigation during an EPA site visit conducted in November 1999. Those five units were specifically listed in the AOC. In late summer 2001, Keystone procured new samples and analytical data at the five units identified as the Sheen Pond, F-Pond, Tail Tracks Landfill, East Pond, and Oil Skimmer Basin. For reference, the areas and units discussed in this Report are shown on a layout map of the Keystone facility (see Figure 1-2).

On January 29, 2002, Keystone submitted its *Environmental Indicators Assessment Report* to EPA Region 5. This report documented Keystone's draft EI determination that current human exposures to contaminated soil and migration of contaminated groundwater are under control at the Peoria, Illinois facility. EPA approved of this determination on May 2, 2002 and requested that Keystone proceed with development of final corrective measures necessary to protect human health and the environment from all current and future unacceptable risks that potentially could result from contaminated soil, sediment, and groundwater at the facility.

1.2 Purpose

This Report describes the final corrective measures that are currently being undertaken or are being proposed to mitigate current and future exposure risks due to contaminated soil and groundwater remaining at the facility. Areas with contaminated soil and groundwater above the risk screening levels were detailed in the EI Assessment Report, and this Report has been prepared as a follow-up to that document.

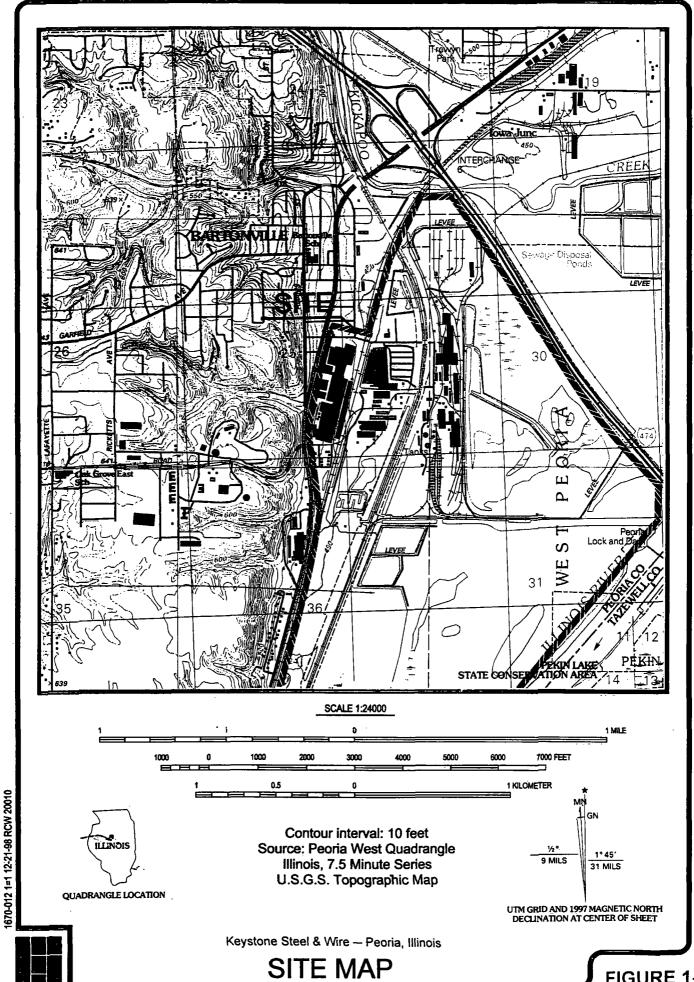
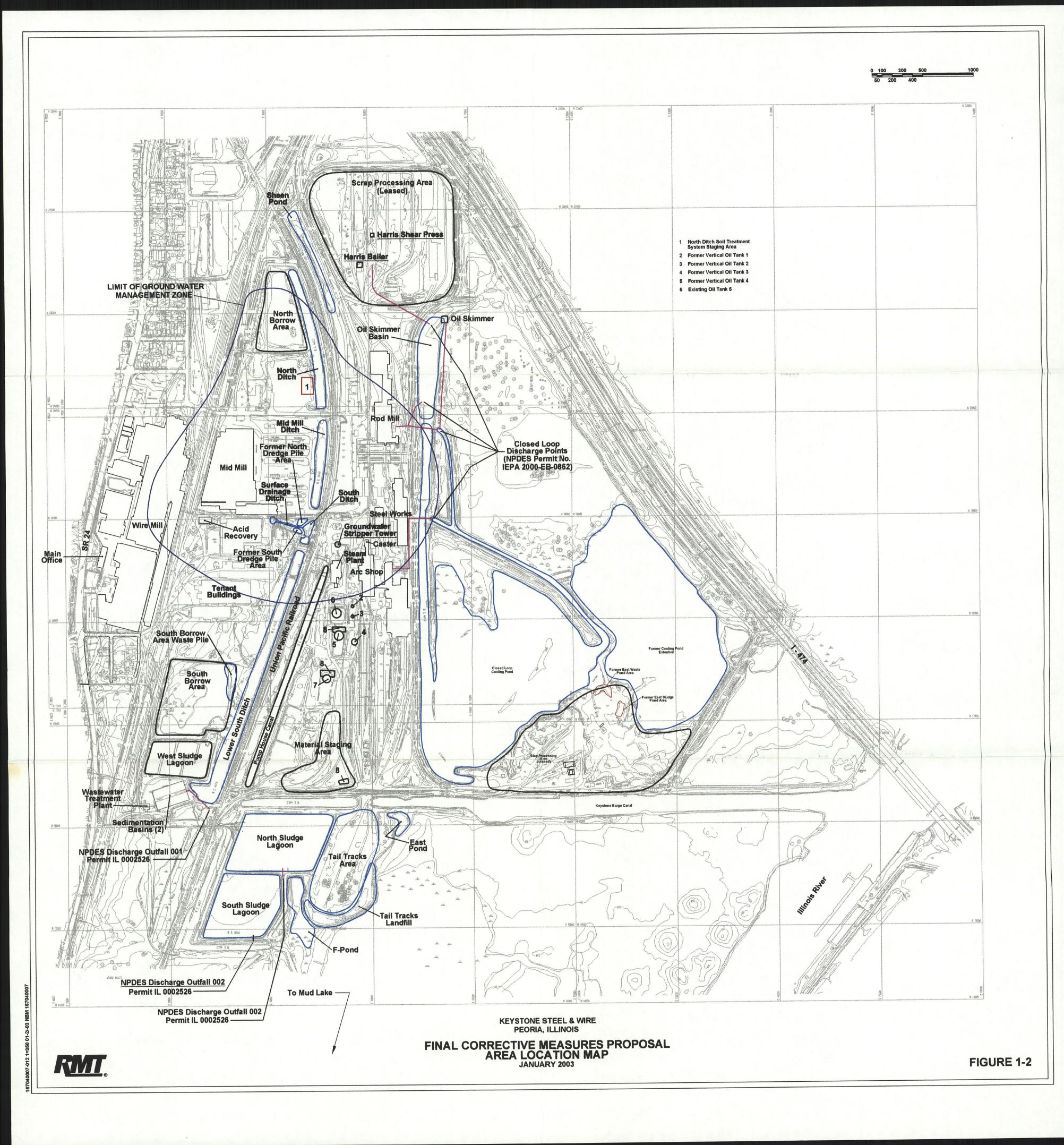


FIGURE 1-1



Section 2 Current Conditions and Status

2.1 Remaining Areas of Concern

Soil and groundwater in several areas at the Keystone's Peoria facility are contaminated at levels above appropriately protective risk-based standards. The risk based standards used for these determinations are the U.S. EPA Region 9 Preliminary Remediation Goals (PRGs) or Illinois risk-based Remedial Objectives (ROs). Most of the areas are units undergoing closure in compliance with a Consent Order with the State of Illinois. The other outstanding areas were originally identified during the 1987 RCRA Facility Assessment (RFA), or during various sampling events performed at the site since the completion of the RFA. As established within the EI Assessment Report, the remaining areas of concern at the facility are listed and discussed below.

2.1.1 Units Being Closed Under the Illinois Consent Order

Corrective action to close several ditches and piles of dredged soil and to remediate a plume of contaminated groundwater has been ongoing at Keystone's Peoria, Illinois facility since 1992. Keystone entered into a Consent Order with the State of Illinois to close these units in 1993, and has been working under the supervision of the Illinois Environmental Protection Agency (IEPA) to implement the closure plan approved under that agreement. Clean closure of several units has been achieved, and activities at the following units are still in progress.

Groundwater Management Zone (GMZ): Keystone's GMZ was established in April 1994 (and approved by IEPA under the Illinois Consent Order) in order to control and begin remediation of a plume of contaminated groundwater that extends under most of the Mid Mill, a section of the Steel Works, and a portion of the Wire Mill. The groundwater plume is being controlled and remediated via a groundwater pump and treat system consisting of four purge wells and an air stripper tower. The current extent of the plume is shown on Figure 1-2. The plume contains chlorinated volatile organic compounds, specifically 1,4-dioxane, 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), trans-1,2-DCE, cis-1,2-DCE, tetrachloroethene (PCE), trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and vinyl chloride. Total volatiles concentrations throughout the GMZ have already been reduced to below one part per million (ppm),

and the area and extent of the plume continue to be reduced by the action of the pump and treat system.

South Ditch: Characteristic hazardous waste sediment exceeding the toxicity characteristic for lead is widely distributed within the ditch. Arsenic, chromium, and lead are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the South Ditch. Shallow groundwater in the area does not appear to have been impacted by the presence of these contaminants, due in part to the low mobility of the metal precipitates bound in the sediment matrix, and also to the low permeability of the native soil (silty clay) that underlies the sediment. Only iron and manganese are routinely detected in the shallow groundwater downgradient of the South Ditch at concentrations above the Illinois ROs.

South Borrow Area Waste Pile: Waste soil exceeding hazardous toxicity characteristic for lead are widely distributed within the soil pile. Arsenic and lead are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the South Borrow Area Waste Pile. Shallow groundwater in the area does not appear to have been impacted by the presence of these contaminants, due in part to the low mobility of the metal precipitates bound in the soil matrix. No contaminants have been observed in the shallow groundwater downgradient of the South Borrow Area Waste Pile at concentrations above the Illinois ROs.

Lower South Ditch: Characteristic hazardous waste (sediment exceeding the toxicity characteristic for lead) has been observed in two locations in this area. Arsenic, chromium, lead, and mercury are the major contaminants observed at levels exceeding the applicable ROs in the sediment of the Lower South Ditch. Shallow groundwater in the area does not appear to have been impacted by the presence of these contaminants, due in part to the low mobility of the metal precipitates bound in the sediment matrix and also to the low permeability of the native soil (silty clay) that underlies the sediment. Only iron is routinely detected in the shallow groundwater downgradient of the Lower South Ditch at concentrations above the Illinois ROs.

Surface Drainage Ditch Area: This area includes four adjacent units, the Surface Drainage Ditch, Stained Soil Area, South Dredge Pile, and North Dredge Pile where remedial excavation was performed in 1996. Additional excavation in the Surface Drainage Ditch and the South Dredge Pile was performed in 2002 in response to supplemental closure confirmation sampling performed during 2000. At this time two areas of residual contamination remain in the Surface Drainage Ditch and the South Dredge pile that are adjacent to the South Ditch and will be addressed along with the South Ditch.

The Stained Soil Area is a lens of stained soil (buried below 8 to 10 feet of cover) that was left in place at the end of the western end of the Surface Drainage Ditch during remediation in 1996 (to avoid undermining the foundations of a compressed oxygen and nitrogen tank farm and several in-service buried pipelines). Samples from this material collected in 2000 indicated the presence of characteristic hazardous waste (soil exceeding the toxicity characteristic for lead).

2.1.2 Units Listed in the EPA AOC

Investigations at the five units listed in the AOC (the Sheen Pond, F-Pond, East Pond, Tail Tracks Landfill, and Oil Skimmer Basin) were conducted in late summer and fall of 2001. The results of these investigations are described in the Sampling Report for Environmental Indicators Assessment Investigation submitted to EPA Region 5 on January 29, 2002. As presented in the Sampling Report and as discussed in the Environmental Indicators Assessment Report, concentrations of contaminants exceeding any risk criteria were only observed in samples from two of these units, the F-Pond and the Tail Tracks Landfill.

F-Pond: Surface water and sediment samples collected from this area in 2001 were analyzed for several metals and volatile organic compounds (VOCs) detected during the 1987 RFA sampling event. Samples collected in 1987 and 2001 indicated the presence of iron and manganese in the surface water above the tap water PRGs. Iron and lead concentrations exceeded the industrial land use PRGs in several sediment samples collected in both 1987 and 2001.

Tail Tracks Landfill: The samples collected from this area during the 1987 RFA sampling event did not contain any constituents at levels significantly above those found in the background samples collected at the time. As per the request for additional investigation in the AOC, Keystone collected soil, groundwater, and surface water samples from the area in 2001. Only one of the seven soil samples from the Tail Tracks Landfill area slightly exceeded the industrial PRG for lead (750 mg/kg), exhibiting a lead concentration of 790 mg/kg. None of the other samples contained any metals at concentrations above the industrial PRGs.

2.1.3 Other Areas of Potential Concern

There are several other areas of the facility from which samples were collected in 1987, or which were discussed in the February 2001 *Current Conditions Report*, and the January 2002 *Environmental Indicators Assessment Report* that must be included in this assessment.

In each of these areas, current or historical sample data has indicated the possible presence of contaminated soil at levels above risk-based standards (EPA Region 9 PRGs) for lead. Additional sampling was performed in three of the areas in December 2002 to assess the current status and/or confirm the presence of contaminants detected in historical sampling events.

North Ditch Soil Treatment System Staging Area: This area was originally identified during closure confirmation sampling at the completion of remedial activity in the adjacent North Ditch in 1996. Lead contamination observed at this location, however, was determined to pre-date the construction of the soil treatment/staging area used during the North Ditch cleanup. IEPA approved the closure of the North Ditch, and has agreed with the conclusion that the observed contamination is not related to the contaminated sediment removed from the North Ditch. The North Ditch Soil Treatment/Staging Area has never been incorporated into the Consent Order with the State of Illinois that governs Keystone's ditch remediation activities, and Keystone feels that it is appropriate to include it as an area of concern under the EPA AOC since no other plans have yet been proposed to address it.

Soil testing conducted in 1996 indicated the presence of lead above the clean-closure cleanup objectives (CUOs) in the layer of fill soil overlying the native silty clay. Concentrations ranged from non-detect to 22.0 mg/L TCLP lead and 380 mg/kg to 12,000 mg/kg total lead. Groundwater sampling conducted in the area in 1998 confirmed that no migration of this lead was occurring (allowing clean closure of the adjacent North Ditch to be approved). Eight additional samples were collected from four locations in this area in December 2002. The results of this sampling event are summarized in Appendix A. The results of the 2002 sampling event confirmed the presence of elevated concentrations of lead in the fill soil around the former treatment system staging area (with three of the four fill samples exhibiting concentrations exceeding the 750 mg/kg industrial soil PRG at 3,700 mg/kg, 7,800 mg/kg, and 990 mg/kg lead), but that the underlying native soil (at about five feet below ground surface) has not been impacted. The maximum lead concentration in the underlying native soil in the four samples collected was 51 mg/kg.

East Sludge Pond and East Waste Pond: Previous interpretations of the 1989 RFA Report have been found to be erroneous in concluding that the samples identified as being from the "East Sludge/Waste Pond" in the RFA Report were collected from the area that was at the time an overflow zone for the Closed Loop Cooling Pond. This misinterpretation has been due to the physical changes in the area since the sampling was performed in 1987. Upon closer examination of the RFA report and historical aerial

photographs and after conducting some site reconnaissance to find landmarks suitable for physically locating soil sample S89 (that was described as having been "collected from the east sludge/waste pond"), it has been determined that the sample was, in fact, collected from one of two distinct ponds that existed at the eastern edge of the slag yard at the time of the sampling (one was designated a Sludge Pond, and the other a Waste Pond).

In 1991, a full levee and plant driveway was constructed around the northeastern perimeter of the Closed Loop Cooling Pond, creating the now isolated portion of the flood plain between the new levee and the nearby levees for I-474 and the Illinois River. During wet weather, rainwater and storm run-off from the slag processing area can accumulate there giving it the appearance of a pond, but it has never received discharges of waste or sludge. Corrected area identifications are shown on Figure 1-2. The large area previously presumed to be the "East Sludge/Waste Pond" is now designated as the "Former Cooling Pond Extension." This former overflow area for the Closed Loop Cooling Pond was sampled and referred to as a part of the cooling pond during the 1987 sampling event and in the 1989 RFA Report.

In 1987, one sediment sample was collected from the East Sludge Pond, and one surface water sample was collected from the East Waste Pond. The sediment sample contained lead at a concentration greater than the industrial land use PRG. A portion of the crescent-shaped depression of the East Waste Pond is still evident, but the entire East Sludge Pond has since been graded over with slag fill. Sufficient landmarks (obtained from aerial photograph inspections) exist to allow the former areas of the East Sludge Pond and East Waste Pond to be established, and samples were collected from each area in December 2002 to confirm the presence of any impacted soil. Results of this sampling event are summarized in **Appendix A**.

The results of the December 2002 sampling event indicated that lead was present in one sample of the former pond sediment layer at the East Waste Pond at an average of 670 mg/kg (sample result at 460 mg/kg with duplicate analysis of 880 mg/kg) and the results for the three other former sediment samples and all four underlying soil samples were less than 50 mg/kg. The sediment layer was encountered at least six feet below ground surface in all four sample locations at the two former pond areas.

Slag Processing Area: Surface samples collected in 1995 from three locations (out of about 40 total) at the Slag Processing Area were found to contain lead at concentrations above the industrial PRG. The 1995 samples were analyzed to confirm that there had been no impact to the area due to the temporary storage of containers managing

residues from the cleanup of the arc shop after a cesium source was inadvertently introduced into the furnace (see the February 2001 *Current Conditions Report*).

The 1995 samples with elevated lead all came from a relatively small area within the slag yard, and at two locations, there was high variability between duplicate sample results. New data was collected from four sample locations in December 2002 to confirm the original data results and evaluate the current status of the area. This data is summarized in Appendix A.

Since 1995, the former ground surface in the area has been re-graded and covered with several layers of new compacted slag aggregate, therefore the new samples were collected at one to three feet below the current ground surface, the approximate ground elevation at the time of the 1995 sampling. Lead was observed in three of the original samples from 1995 at levels above the 750 mg/kg PRG for soil, but lead concentrations in none of the four 2002 samples from the same area exceeded 70 mg/kg.

North and South Sludge Lagoons: These two settling lagoons are used to dewater and store lime precipitate sludge generated at Keystone's on-site wastewater treatment plant (WWTP). The treatment plant is designed to remove dissolved metals from Keystone's wastewater, to meet the effluent discharge limits of the plant's NPDES permit. A sample of the sludge from one of these lagoons collected during the 1987 RFA investigation indicated the presence of iron, lead, and zinc at concentrations (399,000 mg/kg, 4,000 mg/kg, and 286,000 mg/kg, respectively) above the industrial PRGs for soil. This sludge was formerly listed as K063 hazardous waste, as it resulted from the treatment of spent pickle liquor from steel manufacturing operations (listed waste K062), but EPA issued a national, generic delisting for this material in 1980 due to its failure to exhibit toxic characteristics. Both lagoons are individually fenced and Keystone is maintaining them as sludge storage units. No further sampling has been conducted in these areas, and Keystone maintains them in accordance with their NPDES permit requirements.

2.2 Corrective Measures Implemented

Since December 2, 2000, when the AOC between EPA Region 5 and Keystone was implemented, Keystone has continued making progress towards the closure of several units under the jurisdiction of the 1993 IEPA Consent Order, and performed investigative sampling to assess current risks in several other areas of the Peoria, Illinois facility. The activities undertaken since the end of 2000 are summarized below.

2.2.1 IEPA Closures Progress

Groundwater Management Zone: Keystone has continued the operation of the groundwater purge wells and the air stripper tower to control and remediate the plume of contaminated groundwater at the facility. Operations have resulted in a formal reduction in the GMZ area, and significant reductions in overall contaminant concentrations throughout the plume. Quarterly sampling has been performed to monitor plume status and overall system performance.

Surface Drainage Ditch Area: On March 24, 2000, IEPA advised Keystone that clean closure of the soil/sediment at the North Dredge Pile, South Dredge Pile, and Surface Drainage Ditch was not approved due to insufficient clean closure confirmation sampling and inadequate characterization of an area of "stained soil" that could not be removed from the western end of the Surface Drainage Ditch. In September 2000, Keystone implemented clean-closure resampling in these areas and submitted the results to IEPA on December 29, 2000. Conditional approval of the resampling action was provided by IEPA on April 11, 2001 letter, which required that a closure plan be prepared to address soil contamination still present in the units. Keystone submitted a Revised Closure Plan for Surface Drainage Ditch, North Dredge Pile, and South Dredge Pile to IEPA on September 28, 2001.

IEPA provided conditional approval of the revised closure plan and the new designation of the Stained Soil Area as a separate unit on February 11, 2002. The Agency requested additional soil removal for approval of closure at the Surface Drainage Ditch and South Dredge Pile and indicated that no further remediation was necessary at the North Dredge Pile. On May 14, 2002, Keystone submitted a work plan for residual hot spot soil excavation and confirmation sampling in the South Dredge Pile and Surface Drainage Ditch. This plan was approved on July 8, 2002. During the week of September 16, 2002, excavation and confirmation sampling was performed at the residual hot spots in the Surface Drainage Ditch Area east of the steam line.

South Ditch and South Borrow Area Waste Pile: Keystone implemented sampling activities at the South Ditch and the South Borrow Area Waste Pile in April 2000 and submitted a sampling report to IEPA on August 25, 2000. IEPA approved the soil sampling report on December 16, 2000 and later requested that a report be prepared comparing the analytical data for these two areas to Illinois' Tiered Approach to Corrective Action Objectives (TACO) risk-based ROs. Keystone submitted this formal assessment to IEPA on September 28, 2001.

IEPA provided conditional approval for the RO assessment report on February 11, 2002 and requested final closure plans for these two units. Keystone submitted remedial action plans for the South Ditch and the South Borrow Area Waste Pile on August 2, 2002. These plans were approved by IEPA in their November 22, 2002 letter which required that the described actions at these two units be completed by December 1, 2004.

Lower South Ditch: Keystone performed sampling at the Lower South Ditch in September and October 2000, and provided IEPA with a report summarizing the results on December 29, 2000. IEPA approved the sampling report on March 27, 2001, and on April 11, 2001 requested that a report comparing the analytical data for this area to TACO risk-based ROs be prepared. An Illinois Remedial Objectives Assessment Report for Lower South Ditch was submitted to IEPA on September 28, 2001.

IEPA provided conditional approval for the RO assessment report on February 11, 2002, and requested a revised closure plan for the corrective action work to be performed at this unit. Keystone submitted a revised closure plan for the Lower South Ditch to IEPA on August 2, 2002, which was approved on November 22, 2002. In its approval, IEPA required that the two hazardous hot spots in the Lower South Ditch be removed by August 1, 2003, and that the remaining closure actions for the entire Lower South Ditch be completed by December 1, 2004.

2.2.2 Assessments of Other Potential Areas of Concern

Units Listed in the EPA AOC: Sampling activities were performed at the Sheen Pond, F-Pond, East Pond, Tail Tracks Landfill, and Oil skimmer basin between September and December of 2001. The results of the sampling were used to assess the potential impact from facility operations, and determine if any media in the areas were contaminated above risk-based standards. The new and historical data assessment was included in the January 2002 Environmental Indicators Assessment Report.

As detailed in Section 2.4 of the EI Assessment Report, current human exposures at both of the areas with any sample results above the PRGs (i.e., the F-Pond and Tail Tracks Landfill) are under control. This determination was approved by EPA on May 2, 2002, and no additional interim corrective measures were required. Keystone has proceeded with evaluations for final corrective measures for these areas.

Other Outstanding Areas of Potential Concern: Historical sample data for media in several other areas at the Peoria facility that exceeded the PRGs were described in the EI Assessment Report. The locations where historical data exceeding a PRG exists are the North Ditch Staging Area, East Sludge & East Waste Ponds, Slag Processing Area, and

the North & South Sludge Lagoons. Conditions in these areas also indicated that current human exposures were under control (as approved by EPA on May 2, 2002), and no interim corrective measures were required. However, in order to evaluate the current status of potential contamination, additional sampling was performed at the North Ditch Staging Area, East Sludge & East Waste Ponds, and the Slag Processing Area in December 2002 (as discussed above). The compiled data have been used to evaluate final corrective measures for these areas.

2.3 Corrective Measures Considered

IEPA Closures: For those units being remediated under the Illinois Consent Order, final corrective measures proposed to IEPA were evaluated based upon the state's TACO program for risk-based corrective action. In several of these units where listed hazardous characteristic soil (K062) is widely distributed (Stained Soil Area, South Ditch, and South Borrow Area Waste Pile), the only plausible measure is to excavate, treat, and delist the material for off-site disposal since these units cannot meet the requirements of a RCRA hazardous waste landfill for closure in place.

At the Lower South Ditch, only two hot spots containing hazardous characteristic material were identified. Sediment and soil from these two locations within the ditch must be excavated for treatment and off-site disposal. The soil from these hot spots will have to be treated to meet applicable LDRs prior to disposal (with treatment likely similar to that necessary for delisting of the listed hazardous waste sediment in the other IEPA units). Keystone has evaluated various options for remediating the remainder of the sediment in the unit. Options for the remaining contaminated material included (a) excavation and off site disposal after performing any necessary treatment to meet applicable Land Disposal Restrictions (LDRs), (b) capping the sediment in place with an engineered barrier, and (c) consolidating the sediment (to clean close and reuse part of the Lower South Ditch for storm water retention) and capping only the consolidation area. Both capping options will include groundwater monitoring downgradient of the capped area to confirm that no mobilization of hazardous constituents occurs.

North Ditch Staging Area: At the North Ditch Staging Area, Keystone has considered options for excavation and disposal of hazardous waste, due to the presence of some historical sample data indicating the presence of soil exhibiting leachable lead at concentrations exceeding the toxicity characteristic limit. This soil will have to be treated to meet applicable LDRs prior to disposal (with treatment likely similar to that necessary for delisting of the listed hazardous waste sediment contained in the IEPA units).

F-Pond: Options to address sediment in the F-Pond include capping to preclude exposure to lead present in the sediment at levels above the PRGs, or excavation to remove the sediment from the site. If capped, the sediment would need to be stabilized to support the cap (and the weight of equipment to install it) and the cap would need to be designed to withstand erosion due to natural water flow through the area. Periodic groundwater monitoring would also need to be instituted to confirm that no migration of hazardous constituents was occurring. If the sediment were to be excavated, it would need to be tested and treated as necessary for solidification/stabilization (to meet paint filter test) and to bind metals as necessary to meet applicable LDRs.

Tail Tracks Landfill: At the Tail Tracks Landfill area, Keystone is not considering implementing any further corrective measures. Of the six soil samples collected below the toe of the existing landfill cap, only one was found to slightly exceed the industrial soil PRG of 750 mg/kg (at 790 mg/kg). Four of the other five were well below the residential PRG (400 mg/kg) at 68 mg/kg, 110 mg/kg, 195 mg/kg (average of sample and duplicate analysis result), and 220 mg/kg; and the fifth exhibited a total lead concentration of 690 mg/kg. The average concentration in soil at the base of the capped landfill is below the residential soil PRG at approximately 346 mg/kg. Due to this fact and the determination that the groundwater and surface water samples in this area also do not pose a risk to human health or the environment, Keystone maintains that no further action is required.

North and South Sludge Lagoons: These two basins are being used and will continue to be used for storage of Keystone's wastewater treatment plant sludge, therefore, no corrective measures are planned for these areas. It is anticipated that at some point in the future, when sludge storage capacity in the basins is nearing exhaustion, Keystone may find it necessary to excavate them. Keystone has already begun the process of evaluating options for disposing, or reclaiming the settled sludge – if reclamation is feasible due to the high water content of the material. Keystone will work with the IEPA on closure options for these lagoons in the future.

Slag Processing Area: Four samples were collected in the Slag Processing Area in December 2002 to evaluate the current conditions in the vicinity where three samples (out of 39 collected from the area in 1995) contained lead at concentrations above the 750 mg/kg industrial soil PRG. The total lead concentrations in two of these 1995 samples were 1,500 mg/kg and 13,900 mg/kg (each of these results is the average of four duplicates). In the third 1995 sample, only one of four duplicates exceeded the PRG (with a measured concentration of 1,600 mg/kg). However, the overall average for all four duplicates from this location in 1995 (with the next highest value being only 210 mg/kg) was approximately 490 mg/kg. These three 1995 sample locations were all within the same vicinity (see Appendix A, Figure A-2), but were surrounded and interspersed with samples with concentrations below the PRG. A copy of the 1995

analytical data summary and laboratory report for this area is also included with this Report (see Appendix B).

None of the four samples collected from this region of the Slag Processing Area in December 2002 contained lead at a concentration above 80 mg/kg. Therefore, it is apparent that the sample data do not indicate the presence of general contamination or impact by historical facility operations. Moreover, since no contamination was observed in the new samples, there is no basis for additional corrective measures, since no defined area of contamination appears to exist. Therefore, Keystone is not considering implementing any additional corrective measures for the Slag Processing Area at this time.

East Sludge & East Waste Ponds: The areas identified in the 1987 RFA as the East Sludge/Waste Pond no longer exist as they did at that time. Keystone has attempted to evaluate the conditions in the sediment of these two areas by conducting investigative borings and collecting samples of the buried sediment material and underlying soil. Based on the December 2002 sample results, it appears that although there may be some elevated lead present in these areas, it is not uniformly distributed, not high enough to pose significant risk, and is not migrating to the underlying soil. The highest total lead concentration observed in 2002 is below the 750 mg/kg industrial PRG at 670 mg/kg (average of original sample and duplicate analysis). The total lead concentration in the other three sediment samples and the four underlying soil samples were all less than 50 mg/kg. Due to the current conditions, the unknowns surrounding the physical location of the original 1987 RFA sample, and the fact that the residual sediment from these areas is buried at least six feet below ground surface, Keystone is not considering implementing any additional corrective measures at the former East Sludge Pond or former East Waste Pond at this time.

Section 3 Proposed Final Corrective Measures

3.1 IEPA Approved Closure Plans

3.1.1 Groundwater Management Zone

Keystone is currently in the process of designing and preparing to install a fifth purge well near the center of the plume. This additional well will improve recovery of contaminated groundwater where current residual concentrations are the highest. By operating this well in conjunction with the existing wells, it is hoped that the rate of reduction of the plume area will be increased and that the overall concentrations within the GMZ can be more quickly reduced. Installation of the new purge well is being coordinated with ongoing remedial activity in the Surface Drainage Ditch Area since a No Further Remediation Determination must be granted for this unit by the IEPA before construction of the new purge well and piping system can proceed.

Groundwater monitoring will continue to be performed at least semiannually to confirm that the treatment system is maintaining control of the plume, and is continuing to reduce the area of impact and total contaminant concentrations.

3.1.2 Stained Soil Area, South Ditch, & South Borrow Area Waste Pile

Soil and sediment potentially contaminated with listed hazardous waste (K062) which exhibits Toxicity Characteristic Leaching Procedure (TCLP) lead above the hazardous characteristic level is presently distributed in the Stained Soil Area, South Ditch, and South Borrow Area Waste Pile. Closure of these units requires that the hazardous waste material be removed. Keystone intends to excavate and dispose of the contaminated soil from these areas in off-site landfills (either as hazardous waste or Illinois special waste). Treatment of the hazardous characteristic material will be required to meet LDRs for disposal as hazardous waste or delisting petition criteria for disposal as special waste.

Current delisting requirements are based upon the February 17, 1994 Illinois Pollution Control Board (IPCB) delisting petition approval for hazardous waste soil and sediment. At a minimum, Keystone will be required to meet the delisting requirements as set forth in IPCB's 1994 decision in order to treat and dispose of the contaminated sediment as special waste. Due to the age of the original treatability study, advances in admixture

chemistries, and revisions in delisting protocols since the original adjusted standard was approved, Keystone is considering performing a new treatability study and submitting a revised delisting petition to IPCB.

With newer treatment options and maturation of the treatment/delisting process since 1994, Keystone believes that treatment can now be performed much more efficiently and economically than was achieved in the past. In particular, the weight of lime/portland cement (up to 19.5%) and water (typically 10%), significantly added to disposal costs. Newer protocols can achieve treatment with much lower admixture rates. In addition, a revised treatment approach may be more protective of the environment and more consistent with EPA's current guidance on stabilization.

Keystone is planning to perform the removal of hazardous characteristic soil and sediment remaining at the Stained Soil Area, South Ditch, and South Borrow Area Waste Pile, and Lower South Ditch during one mobilization. Due to the relatively small quantity of material that is to be treated (as compared to past ditch remediation volumes) Keystone has determined that it will be uneconomical to attempt to refurbish and mobilize the old pug mill treatment system that was last used in 1996. Treatment of the contaminated sediment and soil will be performed in situ, with admixture ratios as per the existing or revised delisting petition.

Verification sampling of batches of treated soil will be performed at a frequency meeting the existing or revised delisting petition requirements. Once sample results are received confirming that a batch has been delisted, the soil will be either transferred from the units to the concrete staging pad adjacent to the Lower South Ditch using off-road haulers or directly into transport vehicles (roll-off haulers or end dump trailers) for transport to the landfill. Once the contaminated sediment and waste soil has been treated and removed, closure confirmation sampling will be used to verify that all material exceeding TACO Tier 1 Remediation Goals for industrial land use has been successfully excavated.

3.1.3 Lower South Ditch

Hazardous characteristic sediment and perimeter soil at the two hot spot sample locations from the Lower South Ditch will also be treated to meet applicable LDRs and excavated for off-site disposal. Treatment characterization sampling will be performed at a frequency required to meet the receiving landfill's waste profile requirements. Excavation will proceed in lifts of one to two feet, and extending in horizontal area and vertical depth until all hazardous characteristic material has been removed.

Confirmation sampling will be employed at the bottom and side walls of the excavated area to ensure that the remaining material does not exhibit TCLP lead above the hazardous characteristic threshold (5 mg/L).

After the removal of the two hazardous characteristic hot spots has been approved by IEPA, Keystone will pursue TACO closure of the remainder of the Lower South Ditch. In order for the contaminated sediments to be left in place, an engineered barrier sufficient to protect against ingestion and dermal contact exposure routes will be required to meet Illinois' TACO requirements. To maintain the storm water collection and detention capacity currently provided by the Lower South Ditch, Keystone intends to consolidate the sediment from the southern half of the unit into the northern half and cap only the consolidation area. All excavated portions of the ditch will be subject to closure confirmation sampling to ensure that all of the exposed underlying soil meets Illinois TACO Tier 1 remediation goals for industrial soil.

In order to allow a cap to be installed over the sediment in the Lower South Ditch, the sediment itself must be stabilized to support the weight of construction equipment and the cap. The Lower South Ditch will be dewatered by pumping and treating the accumulated water through the on-site WWTP. Temporary sumps and drainage channels may also be created along the ditch to provide additional dewatering capacity and to collect and control surface run-off due to storm events during construction.

A lime/pozzolan mixture will be mixed into the sediment, working first from the shoreline, then working outward and across the ditch as the sediment is stabilized. Clean fill soil will be used to "bridge" unstable areas when necessary to provide access for the construction equipment. The admixture will serve to solidify the sediment, allow it to shed water (until the engineered barrier is installed), improve its workability, and provide sufficient structural stability to support the engineered barrier during and after construction. Keystone will excavate the sediment in the southern half of the area (after or as part of the stabilization process) and transfer it to the northern half (after the northern half has been stabilized).

Keystone has not yet procured formal engineering drawings or designs for the engineered barrier. The final design and layout of the barrier will be submitted for IEPA review and approval prior to its construction. The current conceptual design is to provide a three-foot thick barrier to cover the stabilized sediment, which would include a geotextile, a six-inch drainage layer, two feet of clay, and six inches of vegetated topsoil. Such a design will be sufficient to preclude direct human contact with the sediment (with appropriate institutional controls).

Institutional controls will be required for the engineered barrier over the Lower South Ditch to obtain a No Further Remediation determination under TACO. Keystone will develop and file a restrictive covenant with Peoria County that prescribes methodologies for (1) effective inspection & maintenance of the barrier, (2) notification to workers or contractors prior to intrusive activity (regarding hazards, protective measures, etc.), and (3) provisions for handling/repairing planned or accidental breaches. Keystone intends to work with IEPA on the language and specific requirements of the restrictive covenant prior to its filing. The final closure report for the Lower South Ditch will include documentation of the implemented controls for IEPA review and approval.

3.2 North Ditch Staging Area

Fill soil adjacent to the North Ditch in the area of the former North Ditch sediment treatment and staging area contains total lead at concentrations exceeding PRGs for industrial land use, and in some locations exceeding the hazardous characteristic level for toxicity. Keystone intends to treat and excavate this soil for off-site disposal. Treatment will be performed *in situ* in one to two-foot lifts using similar techniques and admixtures as those used for the IEPA closure actions. Verification sampling will be performed on treated soil batches *in situ*, or from soil staged in roll-off boxes at a frequency required to meet the receiving landfill's waste profile requirements.

Once verification sample results confirm successful treatment, soil will be transferred to the landfill for disposal (either in roll-off boxes or end dump trailers). Soil treatment and excavation will continue until native soil is encountered, or until the exposed soil meets the cleanup criteria. Real-time field confirmation sampling using X-ray Fluorescence (XRF) testing equipment will be employed to estimate residual soil concentrations as excavation is performed. Formal closure samples will be collected for analysis by an analytical laboratory when excavation has been completed, to confirm that no remaining soil exceeds the PRGs.

3.3 F-Pond

Sediment in the F-pond contains lead and iron at concentrations exceeding the PRGs for industrial land use. Keystone intends to implement treatment and excavation of the impacted sediment for off-site disposal. During the summer and fall, this pond contains minimal stagnant water, so that dewatering activities could be conducted by creating sumps and pumping collected water into portable tanks or, if feasible, through temporary piping for diversion to Keystone's wastewater treatment plant. The area will be hydraulically isolated by creating a berm at the outlet to Mud Lake once dewatering activities have been put in place.

The soil will then be treated *in situ* to meet LDRs for off site disposal using similar techniques and admixtures as applied to sediment in the IEPA units.

Verification sampling will be performed on treated soil batches *in situ*, or from soil staged in roll-off boxes at a frequency required to meet the receiving landfill's waste profile requirements. Once verification sample results confirm successful treatment, soil will be transferred to the landfill for disposal (either in roll-off boxes or end dump trailers). Soil treatment and excavation will continue until native soil is encountered, or until the exposed soil meets the cleanup criteria. Real-time field confirmation sampling using X-ray Fluorescence (XRF) testing equipment will be employed to estimate residual soil concentrations as excavation is performed. Formal closure samples will be collected for analysis by an analytical laboratory when excavation has been completed, to confirm that no remaining soil exceeds the PRGs.

Section 4 Corrective Measures Implementation

4.1 Cleanup Standards

Cleanup standards for the IEPA-approved closures are the published Illinois TACO Tier 1 Remediation Objectives for Industrial and Commercial Land Use. The applicable standard for each constituent of concern (COC) is the lowest value of the three applicable human exposure routes: inhalation, soil ingestion, and groundwater ingestion. Based upon the comprehensive sampling events performed in 2000 and the 2001 remedial objectives assessment performed for IEPA, approved COC lists have been developed for each area. Confirmation soil sampling and continuing groundwater monitoring will be used to establish if and when the cleanup standards have been achieved in each remaining unit.

Cleanup standards for the North Ditch Staging Area and the F-Pond will be the EPA Region 9 PRGs (most recently updated October 1, 2002) for direct contact to industrial soil. Closure confirmation soil samples will be conducted after excavation in each area to evaluate whether the cleanup criteria (for total lead at the North Ditch Staging Area, and for total lead and iron at the F-Pond) have been met.

4.2 Estimated Costs

Current estimated cost tabulations for the remaining IEPA unit closures and the proposed final corrective measures at the North Ditch Staging Area and the F-Pond are presented in Appendix C. The estimates for the North Ditch Staging Area and F-Pond excavation are based upon unit costs for assumed depths of impacted soil/sediment in each area. The estimates for these two areas have also been developed assuming that Keystone will be able to implement remediation using techniques developed for the IEPA closures. The total cost for the outstanding IEPA closures is estimated to be about \$5,320,000, with an additional \$95,000 per year in GMZ monitoring costs (at quarterly sampling frequency). The cost for implementing the proposed corrective measures at the North Ditch Staging Area and the F-Pond is estimated to be about \$1,370,000.

4.3 Schedule

Based on the current and anticipated deadlines set by IEPA, most of the work required under the Consent Order with Illinois will be substantially completed by the end of 2004. In 2003,

Keystone expects to install a new (fifth) purge well for the GMZ, continue operation of the groundwater pump and treat system, continue GMZ monitoring, and conduct the preliminary work to allow major excavation work for the remaining ditch closures. These preliminary tasks include preparing a revised delisting petition (if appropriate), removing (and confirming the removal of) the two Lower South Ditch hazardous characteristic hot spots, and implementing several infrastructure modifications (including the relocation of three 180-foot long, 9-foot diameter compressed gas tanks and associated piping) to allow remediation at the Stained Soil Area to be performed.

In 2004, Keystone will begin the mobilization for contaminated sediment treatment, excavation, and disposal at the Stained Soil Area, South Ditch, and South Borrow Area Waste Pile. Corrective action at the Lower South Ditch will also be undertaken to stabilize, consolidate, and cap the contaminated sediment in that unit. Due to the amount of time and resources required to complete these actions, it is unlikely that the proposed corrective actions at the North Ditch Staging Area and F-Pond will be achievable during 2004. Therefore, Keystone expects to implement these actions as a separate mobilization in 2005.

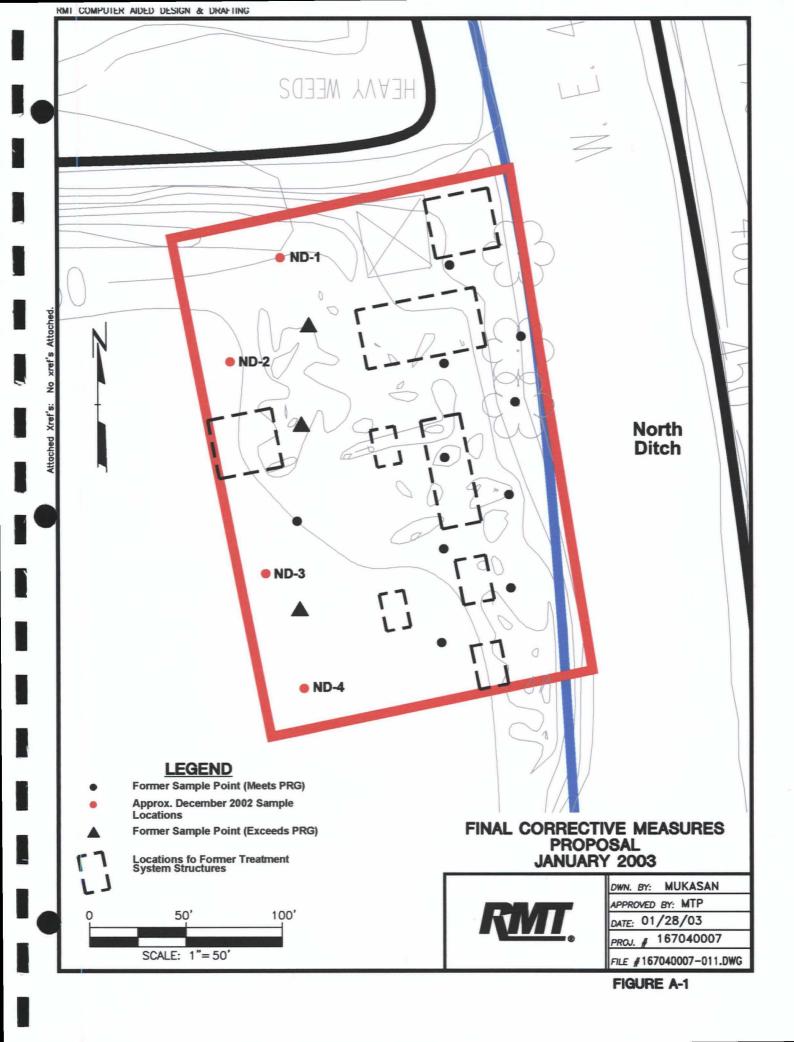
Appendix A Summary of 2002 Analytical Data

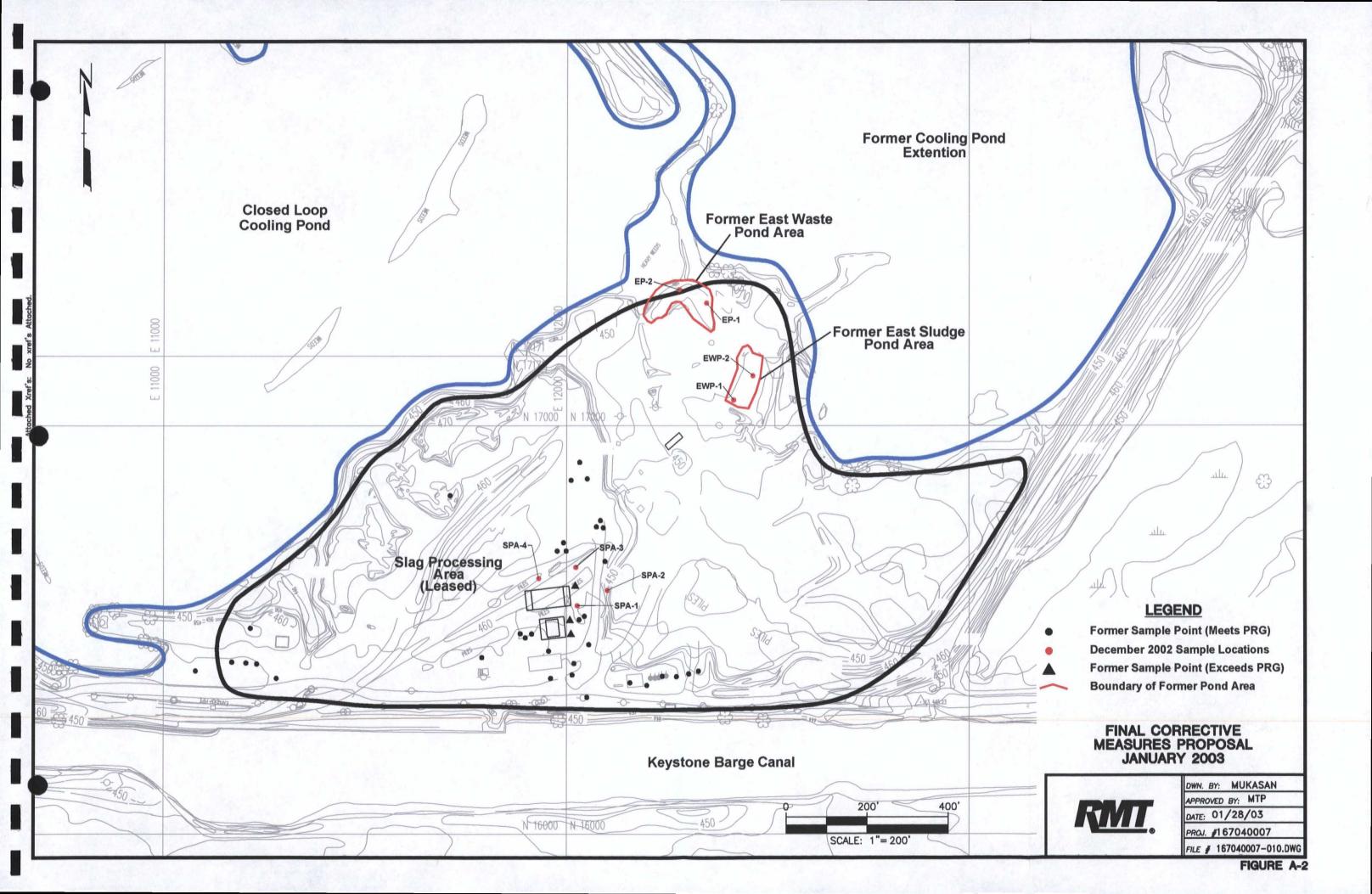
North Ditch Staging Area,
Slag Processing Area,
East Waste Pond, &
East Sludge Pond

Table A-1 Summary of December 2002 Sample Results

North Ditc	h Staging A							
		Sample				Depth		Total Lead
	Node	No.	Lab ID	Date	Time_	interval*	Soil Description:	(mg/kg):
	ND-1	1	02121645-1	12/4/2002	9:40	1-3'	Black/brown silty sand fill	470
	ND-1	2	02121645-2	12/4/2002	9:50	5-7'	Gray/brown day	20
	ND-1	2 (dup)	02121645-21	12/4/2002	9:50	5-7'	Gray/brown clay	20
	ND-2	1	02121645-3	12/4/2002	10:10	1-3'	Black/brown silty sand fill w/ slag	3,700
	ND-2	2	02121645-4	12/4/2002	10:15	5.5-6.5'	Brown/black day	13
	ND-3	1	02121645-5	12/4/2002	10:50	1-3'	Brown silty sand fill w/ slag	7,800
	ND-3	2	02121645-6	12/4/2002	11:00	5.5-6.5'	Black/brown clay	16
	ND-4	1	02121645-7	12/4/2002	11:10	1-3'	Brown/black silty sand fill w/ slag	990
	ND-4	2	02121645-8	12/4/2002	11:20	6-7'	Black/brown clay	51
01 D								
Siag Proce	ssing Area					Depth		Total Lead
	Node	Sample No.	Lab ID	Date	Time	Interval*	Soil Description:	(mg/kg):
	SPA-1	1	02121645-9	12/5/2002	7:50	1-3'	Crushed Slag	(ilig/kg/. 68
	SPA-1	1	02121645-11	12/5/2002	8:00	1-3'	Crushed Slag	14
	SPA-2 SPA-3	1	02121645-10	12/5/2002	8:20	1-3'	Crushed Slag	78
	SPA-4	1	02121645-12	12/5/2002	8:40	1-3'	Crushed Slag	30
	OI A-4	•	0212101012	120202	0.40		o. dollod olag	
East Sludg	e Pond							
		Sample				Depth		Total Lead
	Node	No.	Lab ID	Date	Time	Interval*	Soil Description:	(mg/kg):
•	EWP-1	1	02121645-13	12/5/2002	9:40	7-9'	Brown/black silty sediment	47
	EWP-1	2	02121645-14	12/5/2002	9:50	12-13'	Brown/black clay	16
	EWP-2	1	02121645-15	12/5/2002	10:45	8-9'	Black/brown silty sediment	460
	EWP-2	1 (dup)	02121645-22	12/5/2002	10:45	8-9'	Black/brown silty sediment	880
	EWP-2	2	02121645-16	12/5/2002	10:55	10-11'	Black/brown to greeen clay	48
East Wastr	Dond							
East Wasu	FUNG	Sample				Depth		Total Lead
	Node	No.	Lab ID	Date	Time	Interval*	Soil Description:	(mg/kg):
-	EP-1	1	02121645-17	12/5/2002	11:45	10-11'	Brown silty sediment	24
	EP-1	2	02121645-18	12/5/2002	11:50	11-13'	Brown/black to gray clay	15
	EP-2	1	02121645-19	12/5/2002	13:50	6-7'	Brown silty sediment	34
	EP-2	ż	02121645-20	12/5/2002	14:00	9-11'	Brown to green/gray clay	13
		-				•		

^{*} All depths intervals are in feet below ground surface.







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Report Cover Page

Keystone Steel & Wire Co. 7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

This report includes information regarding the following described samples as received by the laboratory and is only valid for the parameters tested. This report contains 25 results page(s) not including the cover page(s).

	Sample No. Client ID Site Locator
1	02121645-1 PO WN17983 ND-1 1-3' COMPOSITE
_	02121645-2 PO WN17983 ND-1 507' COMPOSITE
1	02121645-3 PO WN17983 ND-2 1-3' COMPOSITE
	02121645-4 PO WN17983 ND-2 5.5-6.5 COMPOSITE
I	2121645-5 PO WN17983 ND-3 1-3' COMPOSITE
	02 645-6 PO WN17983 ND-3 5.5-6.5 COMPOSITE
	02121645-7 PO WN17983 ND-4 1-3' COMPOSITE
1	02121645-8 PO WN17983 ND-4 6-7' COMPOSITE
	02121645-9 PO WN17983 SPA-1 1-3' COMPOSITE
1	2121645-10 PO WN17983 SPA-3 2-3' COMPOSITE
	02121645-11 PO WN17983 SPA-2-1-3' COMPOSITE
1)2121645-12 PO WN17983
	 02121645-13



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Report Cover Page

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Sample No. Client ID Site Locator
2121645-14 PO WN17983 EWP-1 12-13' COMPOSITE
02121645-15 PO WN17983 EWP-2 5-9' COMPOSITE
)2121645+16 PO WN17983 EWP-2 10-11' COMPOSITE
02121645-17 PO WN17983 EP1- 10-11' COMPOSITE
2121645-18 PO WN17983 EP1- 11-13' COMPOSITE
2 645-19 PO WN17983 EP-2 6-7' COMPOSITE
02121645-20 PO WN17983 EP-2 9-11' COMPOSITE
2121645-21 PO WN17983 DUP-1 COMPOSITE
02121645-22 PO WN17983 DUP-2 COMPOSITE
2121645-23 PO WN17983 MS/MSD COMPOSITE
02121645-24 PO WN17983 RINSE BLANK 1 COMPOSITE
2121645-25 PO WN17983 RINSE BLANK 2 COMPOSITE

Certified by:

Kurt C. Stepping, Director of Client Services

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Dirinking Water Certifications: Indiana (C-IL-04); Kansas (E-10338); Kentucky (90058); Missouri (00870); Wisconsin (998294430)

Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430)

Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998294430)

UST Certification: Iowa (240)

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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID: 02121645-1 PO WN17983

Site: Locator: ND-1 1-3' COMPOSITE

Collect Date:

04-DEC-02 09:40

Parameter Result	Units Date By
SW-646 METHOD 3051 Sample Preparation	09-Dec-02 16:00 TCH
Lead 470	mg/kg 12-Dec-02 08:24 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-2 Client ID: PO WN17983 Site: ND-1 507'

Locator: COMPOSITE

Collect Date: 04-DEC-02 09:50

Paraméter Result Units Date By
W-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
Lead 20. mg/kg 12-Dec-02 09:06 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID: 02121645-3 PO WN17983

Site: Locator: ND-2 1-3' COMPOSITE

Collect Date:

04-DEC-02 10:10

Parameter Result Units Date	Ву
SW-846 MPTHOD 3051 Sample Preparation 09-Dec-0	02 16:00 TCH
Lead 3700 mg/kg 12-Dec-C)2 09:16 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Peoria, IL 61641

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID:

02121645-4 PO WN17983

Site: Locator: ND-2 5.5-6.5 COMPOSITE

Collect Date:

04-DEC-02 10:15

	Parameter Result Units Date By
•	SW-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
1	Lead 13. mg/kg 12-Dec-02 09:21 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Login No. 02121645

Attn: Mr. Russ Perry

Sample No: 02121645-5 Client ID: PO WN17983

Site: ND-3 1-3' Locator: COMPOSITE

Collect Date: 04-DEC-02 10:50



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Attn: Mr. Russ Perry Login No. 02121645

Sample No: 02121645-6 Client ID: PO WN17983

Site: ND-3 5.5-6.5 Locator: COMPOSITE

Collect Date: 04-DEC-02 11:00

	Parameter Result Units Date By
•	SW-846 MRTHOD 3051 Sample Preparation 09-Dec-02 16:60 TCH
	##846 METHOD 60108 Lead 16. mg/kg 12-Dec-02 09:45 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-7 Client ID: PO WN17983 Site: ND-4 1-3'

Locator: COMPOSITE

Collect Date: 04-DEC-02 11:10

Parameter Result Units Date By
SW-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCB
Lead 990 mg/kg 12+Dec+02 09:49 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-8 Client ID: PO WN17983

Site: ND-4 6-7' Locator: COMPOSITE

Collect Date: 04-DEC-02 11:20

Parameter Result Units Date By

SW-846 METHOD 3051

Sample Preparation 09-Dec-02 16:00 TCH

W-846 METHOD 60108

Lead 51. mg/kg 12-Dec-02 09:53 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID:

02121645-9 PO WN17983

Site: Locator:

SPA-1 1-3' COMPOSITE

Collect Date:

05-DEC-02 07:50

Parameter Result Units Date	Ву
SW-846 METHOD 3051 Sample Preparation 09-Dec-02 16	:00 TCH
W#846 MRTHOD 60108 Lead 68. mg/kg 12-Dec-02 09	:58 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-10 Client ID:

PO WN17983 SPA-3 2-3'

Site: Locator:

COMPOSITE

Collect Date:

05-DEC-02 08:20

Parameter Result Units Date	Ву
SW-846 METHOD 3051 Sample Preparation 09-Dec-02	16:00 TCH
Lead 78. mg/kg 12-Dec-D2	10:02 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No:

02121645-11 Client ID: PO WN17983

Locator:

Site: SPA-2 1-3' COMPOSITE

Collect Date:

05-DEC-02 08:00

Parameter Result Units Date By
SW-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
Lead 14. mg/kg 12-Dec÷02 10:06 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

.

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02 Client ID: PC

02121645-12 PO WN17983 SPA-4 1.5-3'

Site: Locator:

COMPOSITE

Collect Date:

05-DEC-02 08:40

	Parameter Result Units Date By
S R	W-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
	#=846 METROD 60108 Lead 30. mg/kg 12-Dec-02 10:11 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No:

02121645-13 Client ID: PO WN17983

Site: Locator:

EWP-1 7-9' COMPOSITE

Collect Date:

05-DEC-02 09:40

Parameter Result Units 1	Jate By
SW+846 METHOD 3051	
Sample Preparation 09	-Dec-02 16:00 TCH
SW-846 METHOD 6010B	
Lead 47. mg/kg 12	-Dec-02 10:31 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID:

02121645-14 PO WN17983

Site: Locator:

EWP-1 12-13'
COMPOSITE

Collect Date:

05-DEC-02 09:50

Parameter Res	sult Units Date By
SW-846 METHOD 3051	
Sample Preparation SW-846 METHOD 6010B	09-Dec-02 16:00 TCH
Lead 16.	mg/kg 12-Dec-02 10:40 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-15 Client ID: PO WN17983

PO WN17983 EWP-2 5-9'

Site: Locator:

COMPOSITE

Collect Date: 05-DEC-02 10:45

Parameter Result Units Date By
SW-845 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
6W+846 /MRTHOD 6010H Lead 460 mg/kg 12-Dec-02 10:45 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID: 02121645-16 PO WN17983

Site: Locator:

EWP-2 10-11' COMPOSITE

Collect Date:

05-DEC-02 10:55

Parameter Result Units Date By	2002
SW-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH	8008
##-846 WHITHOU SUIDS Lead 48. mg/kg 12-Dec-02 10:49 jmp	ć.



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-17 Client ID: PO WN17983

Site: EP1- 10-11'
Locator: COMPOSITE

Collect Date: 05-DEC-02 11:45

Parameter	Result Unit	s Date By
SW-846 METHOD 1051 Sample Preparation		09-Dec-02 16:00 TCH
Lead	24. mg/k	g 12-Dec-02 10:53 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: 02121645-18 Client ID: PO WN17983 Site: EP1- 11-13'

Locator: COMPOSITE

Collect Date: 05-DEC-02 11:50

Parameter Resu	lt Units Date By
SW-846 METHOD 3051 Sample Preparation	09-Dec-02 16:00 TCH
W-846 METHOD 6010B Lead 15.	mg/kg 12-Dec-02 10:58 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

Peoria, IL 61641

PDC Cust. # : 211001

Attn: Mr. Russ Perry

Login No. 02121645

Sample No: Client ID:

Site:

02121645-19 PO WN17983 EP-2 6-7'

Locator:

COMPOSITE

Collect Date:

05-DEC-02 13:50

Parameter	Result Dnits Date By	8
SW-846 METHOD 3051		
Sample Preparat	on 09-Dec-02 16:00 TCH	3000
Lead	34. mg/kg 12-Dec-02 11:03 jmp	Ž.



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID:

02121645-20 PO WN17983

Site: Locator:

EP-2 9-11' COMPOSITE

Collect Date:

05-DEC-02 14:00

Parameter Result	Units Date By
SW-846 MPTHOD 3051 Sample Preparation	09-Dec-02 16:00 TCH
Lead 13.	mg/kg 12-Dec-02 11:08 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

· Sample No: Client ID:

02121645-21 PO WN17983

Site: DUP-1 Locator:

COMPOSITE

04-DEC-02 00:01 Collect Date:

Parameter Result Units Date	Ву
Sample Preparation 09-Dec-02 16:00	TCH
Lead 20. mg/kg 12-Dec-02 11:30	jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID:

02121645-22 PO WN17983

Site: DUP-2 Locator:

COMPOSITE

Collect Date: 05-DEC-02 00:01

Parameter Result Units Date By
9W-846 METHOD 3051 Sample Preparation 09-Dec-02 16:00 TCH
W-846 NETHOD 60168 Lead 880 mg/kg 12-Dec-02 11:34 jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID: 02121645-23 PO WN17983

Site: MS/MSD

Locator: COMPOSITE

Collect Date: 05-DEC-02 08:00



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID:

02121645-24 PO WN17983

Site: RINSE BLANK 1

Locator:

COMPOSITE

Collect Date: 04-DEC-02 16:48

Parameter Res	ult Units Date By
SW-846 METHOD 3015 Sample Preparation	09-Dec-02 11:00 TCE
Lead U 10.	ug/l 13-Dec-02 07:44 Jmp



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Laboratory Results

Keystone Steel & Wire Co.

7000 S, Adams

Peoria, IL 61641

Attn: Mr. Russ Perry

Date Received: 06-Dec-02 Date Reported: 20-Dec-02

PO #:

PDC Cust. # : 211001

Login No. 02121645

Sample No: Client ID: 02121645-25 PO WN17983

Site: Locator:

RINSE BLANK 2 COMPOSITE

Collect Date:

05-DEC-02 16:30

Farameter	Result Units Date By
SW-846 METHOD 3015 Sample Prepar	ation 09-Dec-02 11:00 TCH
Lead	U 10. ug/l 13-Dec+02 07:49 Jmp

ROJECT: 02121645

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

CC CROSS REFERENCE REPORT

e Taç	Method Sample	Analyst	alysis Date	alysis Lot	Prep. Lot	Client ID	Lab ID
	SW6010B	jmp	ec-02 08:24	WG68718	WG68671	ND-1 1-3'	02121645-1
	SW6010B	qmt	ec-02 09:06	WG68718	WG68671	ND-1 507'	02121645-2
	SW6010B	qmt	ec-02 09:16	WG68718	WG68671	ND-2 1-3'	02121645-3
	SW6010B	du ć	ec-02 09:21	WG68718	WG68671	ND-2 5.5-6.5	02121645-4
	SW6010B	dwf.	ec-02 09:40	WG68718	WG68671	ND-3 1-3'	02121645-5
	SW6010B	jmp	ec-02 09:45	WG68718	WG68671	ND-3 5.5-6.5	02121645-6
	SW6010B	jmp	ec-02 09:49	WG68718	WG68671	ND-4 1-3'	02121645-7
	SW6010B	qmt	ec-02 09:53	WG68718	WG68671	ND-4 6-7'	02121645-8
	SW6010B	jmp	ec-02 09:58	WG68718	WG68671	SPA-1 1-3'	02121645-9
	SW6010B	qmį	ec-02 10:02	WG68718	WG68671	SPA-3 2-3'	02121645-10
	SW6010B	jmp	ec-02 10:06	WG68718	WG68671	SPA-2 1-3'	02121645-11
	SW6010B	jmp	ec-02 10:11	WG68718	WG68671	SPA-4 1.5-3'	02121645-12
	SW6010B	jmp	ec-02 10:31	WG68718	WG68671	EWP-1 7-9'	02121645-13
	SW6010B	jmp	ec-02 10:40	WG68718	WG68671	EWP-1 12-13'	02121645-14
	SW6010B	jmp	c-02 10:45	WG68718	WG68671	EWP-2 5-9'	02121645-15
	SW6010B	gmj	C-02 10:49	WG68718	WG68671	EWP-2 10-11'	02121645-16
	SW6010B	jmp	c-02 10:53	WG68718	WG68671	EP1- 10-11'	02121645-17
	SW6010B	jmp	ec-02 10:58	WG68718	WG68671	EP1- 11-13'	02121645-18
	SW6010B	jmp	C-02 11:03	WG68718	WG68671	EP-2 6-7'	02121645-19
	SW6010B	jmp	C-02 11:08	WG68718	WG68671	EP-2 9-11'	02121645-20
	SW6010B	jmp	c-02 11:30	WG68718 :	WG68671	DUP-1	02121645-21
	SW6010B	jmp	c-02 11:34	WG68718	WG68671	DUP-2	02121645-22
	SW6010B	jmp	c-02 11:39	WG68718 :	WG68671	MS/MSD	02121645-23
	SW6010B	Jmp	c-02 07:44	WG68767	WG68726	RINSE BLANK 1	02121645-24
	SW6010B	Jmp	c-02 07:49	WG68767 :	WG68726	RINSE BLANK 2	02121645-25

ethod blank

Laboratory	ID:	WG68671-1	Analysis	Lot: WG68718	Prep	Batch: WG68671	Sample	Tag:
		Analyte	Units	Value	RDL	Analysis	Date	
		Lead	MG/KG	1.00	1.0	12-Dec-02	08:07	
boratory	ID:	WG68671-5	Analysis	Lot: WG68718	Prep	Batch: WG68671	Sample	Tag:
		Analyte	Units	Value	RDL	Analysis	Date	
E		Lead	MG/KG	1.00	1.0	12-Dec-02	11:22	
boratory	ID:	WG68726-1	Analysis	Lot: WG68767	Prep	Batch: WG68726	Sample	Tag:
		Analyte	Units	Value	RDL	Analysis	Date	
		Lead	UG/L	100	. 10	13-Dec-02	07:34	

Page : 1 20-Dec-2002 09:12

OJECT: 02121645

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

LABORATORY CONTROL SAMPLE

LABORATORY CONTROL SAMPLE

boratory	ID:	WG68671-2	Analvsis	Lot:	WG68718	Sample Tag:

_	Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
	Lead	MG/KG	50.0	46.0	92.0	80.0-120	12-Dec-02 08:12

Laboratory ID: WG68671-6 Analysis Lot: WG68718 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	A nalysis Date
Lead	MG/KG	50.0	46.0	92.0	80.0-120	12-Dec-02 11:26

aboratory ID: WG68726-2 Analysis Lot: WG68767 Sample Tag:

Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
hea.ī	UG/L	556	520	93.6	80 0-120	13-Dec-02 07:39

TRIX SPIKE/MATRIX SPIKE DUPLICATE

2-2	TDa . WC	200073 2	WCC0671 4 3-1	wala tab. WCC07	0 010 0	mibal. 02121646 1	Cibe. ND 1 1 24	01- D
Doratory	TDS: MC	368671-3,	WG686/1-4 ADAI	ysis Lot: WG687	. Sampte S	piked: 02121645-1	Site: ND-1 1-3'	Sample Taq:

 Analyte		Spiked	-	Value	Value				 RPD Limits	
	MG/KG	49	47	470	670	690	350	75.0-125	20.0	•

boratory IDs: WG68671-7, WG68671-8 Analysis Lot: WG68718 Sample Spiked: 02121645-23 Site: MS/MSD Sample Tag:

3	alvte	Mnits		Amt MSD Spiked	~	MS Value	MSD Value	MS % Rec	MSD * Rec	Rec Limits	RPD	RPD Limits	
	•		•	-							_		
	Lead	MG/KG	51	48	12	420	360	830	720	75.0-125	15.0	20.0	*

aboratory IDs: WG68726-3, WG68726-4 Analysis Lot: WG68767 Sample Spiked: 02121645-25 Site: RINSE BLANK 2 Sample Tag:

	Analyte		Spiked	•	Value	Value		MS % Rec		 RPD Limits	
l	Lead	UG/L	556	556	100	540	560		75.0-125	 	

NITIAL CALIBRATION VERIFICATION

boratory ID: WG68718-1 Analysis Lot: WG68718 Sample Tag:

	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
1	Lead	MG/L	4.00	4.1	102	90.0-110	12-Dec-02 07:30

Page: 2 20-Dec-2002 09:12

ROJECT: 02121645

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

INITIAL CALIBRATION VERIFICATION

Laboratory ID: WG68767-1 Analysis Lot: WG68767 Sample Tag:

Analyte Units Spiked Measured Recovery Limits Analysis Date Lead UG/L 4000 4100 102 90.0-110 13-Dec-02 06:56

NITIAL CALIBRATION BLANK

Laboratory ID: WG68718-2 Analysis Lot: WG68718

Analyte Units Value RDL Analysis Date Lead PPB 1.0U 1.0 12-Dec-02 07:37

aboratory ID: WG68767-2

Analysis Lot: WG68767

Analyte Units Value RDL Analysis Date Lead UG/L 10U 10 13-Dec-02 07:07

ONTINUING CALIBRATION BLANK

boratory ID: WG68718-10

Analysis Lot: WG68718

Analyte Units Value RDL Analysis Date Lead MG/L 1.0U 1.0 12-Dec-02 10:23

boratory ID: WG68718-12

Analysis Lot: WG68718

Value RDL Analysis Date
1.0U 1.0 12-Dec-02 11:17 Analyte Units Lead MG/L 1

aboratory ID: WG68718-15

Analysis Lot: WG68718

Analyte Units Value RDL Analysis Date Lead MG/L 1.00 1.0 12-Dec-02 12:12

Laboratory ID: WG68718-6

Analysis Lot: WG68718

RDL Analysis Date Analyte Units Value ______ Lead MG/L 1.0U 1.0 12-Dec-02 08:00

Page : 3 20-Dec-2002 09:12

ROJECT: 02121645

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

CONTINUING CALIBRATION BLANK

Laboratory ID: WG68718-8

Analysis Lot: WG68718

Analyte Units Value RDL Analysis Date

Lead MG/L 1.0U 1.0 12-Dec-02 09:32

Laboratory ID: WG68767-6

Analysis Lot: WG68767

Analyte Units Value RDL Analysis Date

Lead UG/L 10U 10 13-Dec-02 07:29

boratory ID: WG68767-8

Analysis Lot: WG68767

Analyte Units Value RDL Analysis Date

Lead UG/L 10U 10 13-Dec-02 08:11

NTERFERENCE CHECK SAMPLE - A

boratory ID: WG68718-3 Analysis Lot: WG68718

Analyte Units Spiked Measured %Recovery Limits Date

Lead MG/L 0.0 0.00099 N/A N/A 12-Dec-02 07:42

boratory ID: WG68767-3 Analysis Lot: WG68767

Analyte Units Spiked Measured Recovery Limits Dat

Lead UG/L 0.0 1.3 N/A N/A 13-Dec-02 07:12

INTERFERENCE CHECK SAMPLE - AB

boratory ID: WG68718-4 Analysis Lot: WG68718

Analyte Units Spiked Measured Recovery Limits Analysis Date
Lead MG/L 0.050 0.048 96.4 80.0-120 12-Dec-02 07:49

Laboratory ID: WG68767-4 Analysis Lot: WG68767

Analyte Units Spiked Measured Recovery Limits Analysis Date
Lead UG/L 50 48.33 96.7 80.0-120 13-Dec-02 07:17

Page : 4 20-Dec-2002 09:12

ROJECT: 02121645

ME'L'S ANALYSIS (SW6010) AND PREPARATION (SW3051)

CONTINUING CALIBRATION VERIFICATION

CONTINUING CALIBRATION VERIFICATION

	IDIGITOR						
boratory ID: WG68	718-11 A	nalysis	Lot: WG68718	Sample	Tag:		
_	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Lead	MG/L	4.0	4.1	102	90.0-110	12-Dec-02 11:12
Laboratory ID: WG68	718-14 Ar	nalysis :	Lot: WG68718	Sample	Tag:		
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Lead	MG/L	4.0	4.2	105	90.0-110	12-Dec-02 12:08
Laboratory ID: WG687	/18-5 Ana	lysis L	ot: WG68718	Sample T	ag:		
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Lead	MG/L	4.0	4.1	102	90.0-110	12-Dec-02 07:55
boratory ID: WG687	18-7 Ana	lysis Lo	ot: WG68718	Sample T	ag:		
•	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
		MG/L	4.0	4.1	102	90.0-110	12-Dec-02 09:28
boratory ID: WG687	18-9 Ana	lysis Lo	ot: WG68718	Sample T	ag:		
_ 🍎	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Lead	MG/L	4.0	4.0	100	90.0-110	12-Dec-02 10:19
Laboratory ID: WG687	67-5 Ana	lysis Lo	t: WG68767	Sample T	ag:		
	Analyte	Units	Spiked	Measured	*Recovery	Limits	Analysis Date
	Lead	UG/L	4000	3900	97.5	90.0-110	13-Dec-02 07:23
Laboratory ID: WG687	67-7 Ana	lysia Lo	t: WG68767	Sample T	ag:		
	Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
	Lead	UG/L	4000	4100	102	90.0-110	13-Dec-02 08:06
OSŤ DÍGESTION	SDIKE						
DIGESTION	or Thu						
boratory ID: WG687	18-13	Analysis	Lot: WG6871	.8			

Page : 5 20-Dec-2002 09:12

ROJECT: 02121645

METAS ANALYSIS (SW6010) AND PREPARATION (SW3051)

POST DIGESTION SPIKE

boratory ID: WG68718-13 Analysis Lot: WG68718

Analyte	Units	Spiked	Measured	Recovery	Limits	Analysis Date
Lead	MG/KG	49.0	400	80.0	75.0-125	12-Dec-02 12:03

ROJECT: 02121645

METALS ANALYSIS (SW6010) AND PREPARATION (SW3051)

Page : 7 20-Dec-2002 09:12

PDC LABORATORIES, INC. 2231 W. ALTORFER DRIVE PEORIA, IL 61615

PHONE # 309-692-9688 FAX # 309-692-9689



ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

CLIENT	PROJECT NU		P.O. NUMB		MEANS S			in H. Car	ie opor	ESTED (,		(FOR LAB USE ONLY)
\bigcirc ℓ ω ι	1670 40007						(3)					(D) 1645
ADDRESS	PHONE NUMBER		FAX NUMBER		DATE SHIPPED							LOGIN # 02/2/6 45
SOOT RODPETS DE SOLLE TOUS CITY STATE ZIP ALIANTA GA 30350 CONTACT PERSON O	770-641-9756 770			'O-649-937			à					LOGGED BY:
CITY STATE	SAMPLER (PLEABE PRINT)			MATRIX TYPES: WW-WASTEWATER		lead (TEMPLATE:	
CONTROL BERGON	DOE KIND					DW-DRINKING WATER GW-GROUND WATER WWSL-SLUDGE						PROJ. MGR.:
Mark Prytula	SAMPLER'S SIGNATURE	• o ∫	$\widetilde{\bigcap}$ M		NAS-SOLID OTHER:		∥					
2 SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTE	SAMPL D GRAB	E TYPE COMP	MATRIX TYPE	TOTAL # OF CONT	Tota					REMARKS
ND-1 (1-3')	12-4-07	0940		4	Soil	١	V				\prod	Detection limits to
ND-1 (5'-7')	12.4.07	0950		4	Soil	ιι	V				Ц	meet IEPA Pals
ND-9 (1,-3,)	12-4-02	1010		x	50:1	(1		1		\	
ND-2 (5.5'- 6.5')	12-402	1015		K	Soil	t	1					
NO-3 (1'-3')	17-4-07	1050		4	Soil							
ND-3 (5.5' - 6.5')	12-4-07	1100		4	soil	ι						
NO-4 (i-3')	19-4-07	1110		¥	soil	1						
ND-4 (6'-7')	17-4-02	4120		¥	soil	ı						
5PA-1 (1-31)	12-5-02	0750		¥	Soil	\						
5PA-3 (2'-3')	12-502	0870		4	Soil	1						
SPA-2 (1'-3')	12-5-02	0800		4	Soil	l	V					
SPA-4 (1.5'-3')	12-5-07			۴	Soil	1	1					
TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX # IF DIFFERENT FROM ABOVE: PHONE					6	this area y the sample this area y	nple temperature will be measured upon receipt at the lab. By initialing a you request that the lab notify you, before proceeding with analysis, if nple temperature is outside of the range of 0.1-6:0°C. By not initialing a you allow the lab to proceed with analytical testing regardless of the temperature.					
7 SELINQUISHED BY: (SIGN) PROBE:	RECEIVE	ED BY: (SIGN	ATURE)				DATE		8	COMM	ENTS: (FOR LAB USE ONLY)
	ME						TIME					
SELINOUISHED BY: (SIGNATURE)		ED AT LAB BY	/: (SIGNATUF	RE)			DATE		SAMPLE	TEMPERA	TURE	UPON RECEIPT CORN
TIME								SAMPLE SPECIAL DO NICE				NICE YORN OOD CONDITION WORN
	ME	91	llan	len-			TIME		BOTTLES	S FILLED V	VITH A	DEQUATE VOLUME OR N HIN HOLD TIME(S)

PLABOTATORISO, INC. 2231 WEST ALTORFER DRIVE PEORIA, 12 61615

PHONE # 309-692-9688 FAX # 309-692-9689



CHAMPOF COST CON RECORD

	ALL SHADED AREA	AS <u>MUST</u> BE COMPLETE	D BY CLIENT (PLEA	ASE PRIN	VT)		
1 QMTZN	PROJECT NUMBER	P.O. NUMBER	MEANS SHIPPED	° (3 ANALY	SIB AEQUESTED	
ADDRESS	PHONE NUMBER	FAX NUMBER	DATE SHIPPED				LOGIN # 02/2/6 4 5
8407 Loberts Dr. & Sunches	770-641-4756	770-642-025	7		1 1		LOGGED BY:
CITY	SAMPLER		MATRIX TYPES: WW-WASTEWATER				TEMPLATE:
ZIP ALIANA CA 30050	SAMPLERS	KIM .	DW-DRINKING WATER GW-GROUND WATER WWSL-SLUDGE	` '	200		PROJ. MGR.:
Mark Drytula	SIGNATVA	K	NAS-SOLID OTHER:				<u> </u>
2 SAMPLE DESCRIPTION	COLLECTED COLLEC	E BAMPLE TYPE TOTED GRAB COMP	MATRIX TOTA TYPE : OF C	L TOO	क्		REMARKS
TWP-1 (7'-a')	12-5-07 0941) 4	50:1	1			Detation limits to
E~P-1 (18'-13')	12502 0951		Soil 1			1-1-/	Mect IEPA Pauls
EUP-7 (81-91)	12-5-02-1045		Soi \ (
Eul-2 (10'-11')	12-5-02 105	5 4	soil 1		4		
EP-1 (10'-11')	12-5-02 1145	·	Soil (
EP-1 (11'-13')	12-5-02-1150	9	Soil 1				
EP-2 (6'-7')	12-5-01 135	0 4	Soil 1				
EP-2 (9'- 11')	12-502-1400	1 1	Soil	<u> </u>	4		
D-p-1	12-4-02	y	Soil	<u> </u>	4		
Dip-2	12-5-07	1	50:1	_ \	4		
m5) w2D	12-5-02 080	N N	soil 1				
Rinse Blank - 1	12-4-07-164	0 1	worter l	l	<u> </u>	<u> </u>	
5 (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFE	RENT FROM ABOVE:	NE	6 this a	rea you n ample ten	equest that ti nperature is c allow the lab t	he lab notify you, befo outside of the range o	receipt at the lab. By initialing fore proceeding with analysis, if of 0.1-6.0°C. By not initialing vical testing regardless of the
	RECEIVED BY: (5	SIGNATURE)	-		DATE	8 COMME	IENTS: (FOR LAB USE ONLY)
	ME 40				TIME		(a .
RELINQUISHED BY: (SIGNATURE)	PATE RECEIVED AT LA	B BY: (SIGNATURE)			DATE 14/6/n TIME 18:40	SAMPLE TEMPERA CHILL PROCESS S' SAMPLE(S) RECEIVE BOTTLES RECEIVE BOTTLES FILLED W SAMPLES RECEIVE	ATURE UPON RECEIPT STARTED PRIOR TO RECEIPT IVED ON ICE ED IN GOOD CONDITION WITH ADEQUATE VOLUME VED WITHIN HOLD:TIME(S) TO R N CONTROL CON
[

PDC LABORATORIES, INC. 2231 W ALTORFER DRIVE PEORIA, IL 61615

PHONE # 309-692-9688 FAX # 309-692-9689





ALL SHADED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) PROJECT NUMBER MEANS SHIPPED (FOR LAB USE ONLY) P.O. NUMBER ANALYSIS REQUESTED 1670 40007 LOGIN: 02/2/641 PHONE NUMBER FAX NUMBER DATE SHIPPED LOGGED BY: 776-641-9756 LAB PROJ. # SAMPI FR MATRIX TYPES: J (PLEASE PRINT) TEMPLATE: .. WW-WASTEWATER Joe Cry DW-DRINKING WATER GW-GROUND WATER PROJ. MGR.: _ WWSL-SLUDGE OTHER: oteal COLLECTED MATRIX TOTAL # SAMPLE DESCRIPTION REMARKS COLLECTED TYPE OF CONT 2 ine Blank-2 125-02- 1620 unter TURNAROUND TIME REQUESTED (PLEASE CIRCLE) RUSH The sample temperature will be measured upon receipt at the lab. By initialing (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) this area you request that the lab notify you, before proceeding with analysis, if 5 the sample temperature is outside of the range of 0.1-8.0°C. By not initialing **RUSH RESULTS VIA (PLEASE CIRCLE)** PHONE this area you allow the lab to proceed with analytical testing regardless of the sample temperature. FAX # IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE: RELINQUISHED BY: (SIGNATURE) DATE RECEIVED BY: (SIGNATURE) COMMENTS: (FOR LAB USE ONLY) 8 TIME 6 SAMPLE TEMPERATURE UPON RECEIPT LINQUISHED BY: (SIGNATURE) RECEIVED AT LAB BY: (SIGNATURE) DATE GOR N CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE Y OR NO BOTTLES RECEIVED IN GOOD CONDITION TIME **BOTTLES FILLED WITH ADEQUATE VOLUME** OR N SAMPLES RECEIVED WITHIN HOLD TIME(S)

Appendix B 1995 Analytical Data Summary

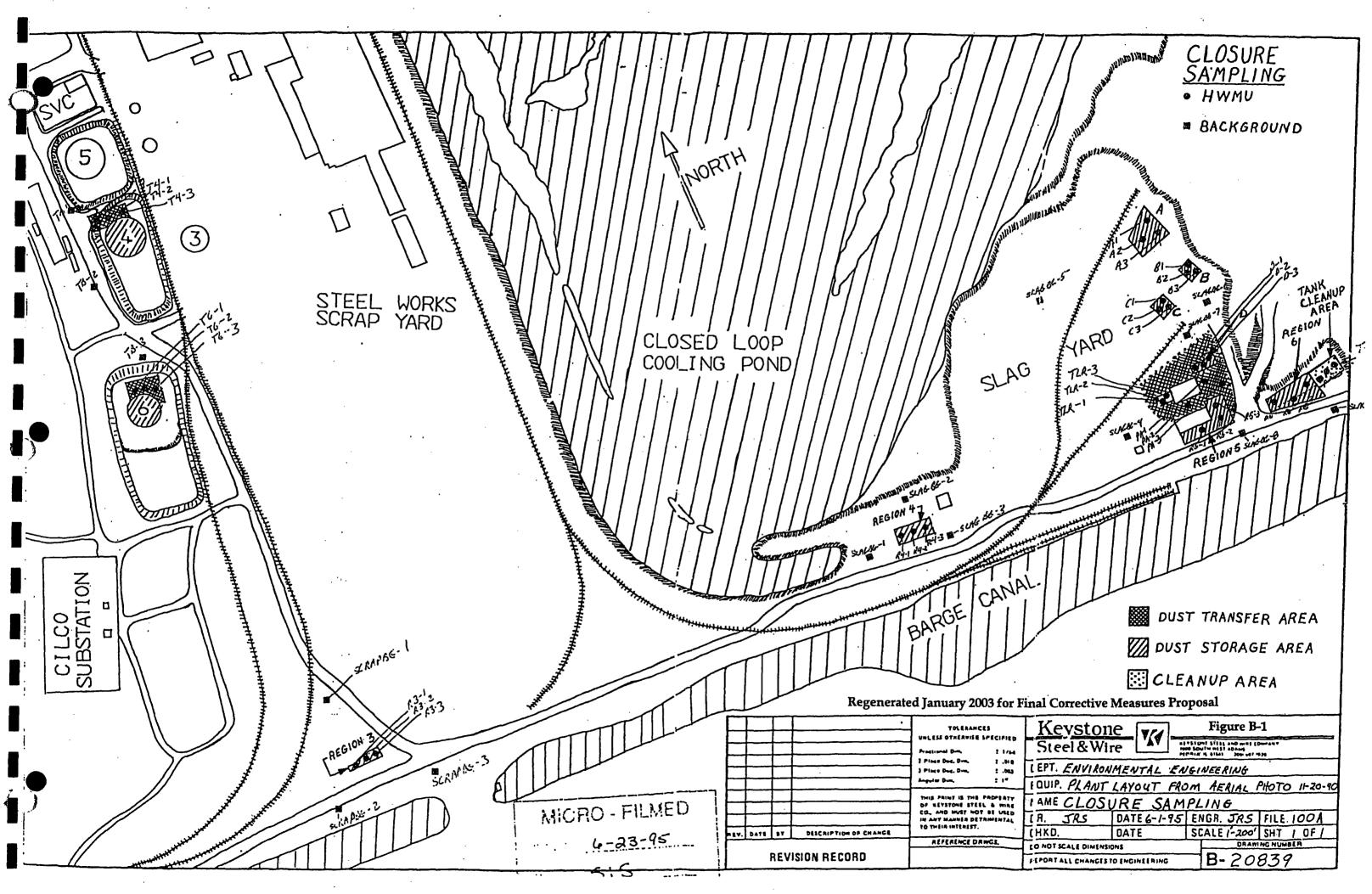
Data for Samples Collected in the Slag Processing Area

Table B-1 Summary of October 1995 Sample Results

IEPA Area ID.	Sample Area	Sample ID#	Date	. Time	Antimony	Arsenic-	Barium	Beryllium	Cadmium	. Chromium .	Lead	; Mercury i	Nickel	Selenium	Silver	Thallium	Zinc
		· -		(24 HR)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SO2	Tank Area (#4 & #6) Background	TB-1	10/05/95	0730	<8.5	14	240	<0.16	2.3	2500	94	0.012	26	<2.6	1.7	<0.62	500
SO2	Tank Area (#4 & #6) Background Tank #4 Processing Area Tank #6 Processing Area	TB-1 TB-2 TB-3	10/05/95	0729	<5.7	8.5 37	240 120 73	< 0.14	2.6	1300	120 300	0.071	19	3.2	0.9	<0.56	630
SO2		TB-3	10/05/95	0727	: <0.60 ·		73	0.36	6.9	290	300	0.036	38	<2.6	0.63	< 0.66	1400
SO2	Tank #4 Processing Area	T4-1	10/05/95	0732	<11 <12	22	320 230	<0.16	3	3300	100	0.01	14	12	1.9	<0.55	860
SO2	1	T4-1 T4-2	10/05/95	0734	<12	20	230	<0.15	<0.74	2400	62	<0.009	17	3.9	1.6	<0.59	250
SO2		T4-3	10/05/95	0736	<9.7	18	260 27	<0.16	<0.93	3000	70	<0.01	28	8	1.6	<0.62	260
SO2	Tank #6 Processing Area	T6-1	10/05/95	0739	<0.69	6.5	27	<0.17	1.6	27	93	<0.01	5.9	<2.8	<0.34	<0.69	250
SO2		T6-2	10/05/95	0741	< 0.56	4.6	95	<0.14	<0.92	49	40	<0.01	6	<2.2	<0.28	<0.56	250
SO2		T6-3	10/05/95	0742	. <4.6	14	170	<0.17	5.7	2100	230	0.057	18	8.1	1.6	<0.68	2000
SO2		T6-3	10/05/95	0742	<3.6	26	150 130 180	<0.24	7.2	1900	230	0.18	17	<1.9	3.7	<0.97	2900
SO2		T6-3 T6-3	10/05/95	0742	<0.93	23	130	<0.23	9.8	1400	300	0.067	25	. <1.9	3.1	<0.93	4000
SO2		T6-3	10/05/95	0742	<4.0	27	180	<0.23	8.4	2300	290	0.063	46	<1.8	4.7	<0.91	3600
				<u> </u>	<u> </u>			<u>.</u>		1		1					•
SOI	Scrap Yard Background	SCRAPBG-1		0752	<9.1	17	170	0.28	2.2	2200	<u>86</u> ·	0.022	39	<2.3	1.3	<0.57	360
SOI		SCRAPBG-2	10/05/95	0754	<1.8	19	140	0.68	2.3	1600	150	0.027	16	<2.5	1.1	<0.62	440
SO1		SCRAPBG-3	10/05/95	0757	<2.2	24	220	0.31	2.9	1800	140	0.033	20	3.3	1.6	; <0.62	940
SOI SOI SOI	Region 3	R3-1	10/05/95	0759	<7.7	22	200 190	0.48	2.6	1900	190	0.19	35	9.2	1.5	<0.60	620
SO1		R3-1 R3-2 R3-3 R3-3	10/05/95	0802	<8.3	21	190	0.34	3.7	1400	210	0.022	42	<2.7	1.6	<0.67	820
SOI		R3-3	10/05/95	0804	<0.61		170	0.33	10	1400 .	640	0.039	41	<2.4	1.8	<0.61	8200
SO1		R3-3	10/05/95	. 0804	<6.1	24	190	0.39	7.2	1300	380	0.079	32	<1.9	1.2	<0.97	2700
SO1		R3-3	10/05/95	0804	<5.1	32	160	0.37	16	1700	330	0.07	35	<1.8	1.2	<0.92	2400
SO1		R3-3	10/05/95	0804	<6.1	31	150	0.29	9.7	1200	380	0.06	30	<1.9	3.2	<0.98	3200
		· 				1.5	·····			600	550	0.020	140	<2.5	1.6		
SO1	Region 4	R4-1	10/05/95	0820	<0.62	15	73	<0.16	11	710	550 500	0.039	140 120	<1.9	3	<0.62 <0.97	3000 4900
SO1	· 	R4-1	10/05/95	0820	<9.2 <8.8	17	94	<0.21	14 17	730	740	0.032	150	<1.9	3.2	<0.97	8600
SOI		R4-1	10/05/95	0820	<5.0	12	53	<0.24	8.9	480	420	0.047	130	<1.8	3.2	<0.92	3600
SOI		R4-1	10/05/95	0820	<0.68	6.9	31	<0.23	3	210	190	0.027	. 66	<2.7	<0.34	<0.68	680
SOI		R4-2	10/05/95 10/05/95	0822 0823	<0.68	9.5	120	0.31	9.2	1100	490	0.018	41	2.7	2.7	<0.68	2000
SOI	Region 5	R5-1	10/05/95	0851	<0.69	17	260	0.17	2.5	1900	180	0.003	38	14	6.3	<0.69	610
SOI	Region 5	R5-2	10/05/95	0853	<5.2	9.6	160	<0.16	1.6	1600	150	<0.01	41.	5.7	1.5	<0.63	360
SOI	÷	R5-3	10/05/95	0855	<3.7	20	200	0.18	3.9	2000	420	0.023	30	<2.8	6.8	<0.71	960
SOI	Region 6	R6-1	10/05/95	0858	<3.9	8.9	120	<0.19	<0.83	1400	88	0.022	25	<3.0	3.5	<0.75	220
SOI	Region o	R6-2	10/05/95	0859	<2.7	11	82	<0.17	2.2	800	110	<0.01	13	4.4	<0.35	<0.69	220
SOI		R6-3	10/05/95	0901	<0.76	17	200	<0.16	Q.5	2100	230	<0.01	110	14	4.8	<0.74	320
SOI	Tank Cleanup Area	TCA-1	10/05/95	0905	<11	24	190	0.19	<0.66	3000	43	<0.01	31	14	6.7	<0.62	280
SOI	Tank Oromap ynou .	TCA-2	10/05/95	0908	<10	18	240	<0.16	2.9	2100	110	<0.01	110	13	6.4	<0.63	370
SOI		TCA-3	10/05/95	0910	<1.5	7.3	56	<0.18	<0.18	370	9.2	<0.01	43	<2.9	5.4	<0.72	30
SO1	Dust Storage Area A	Al	10/05/95	0915	<12	19	350	<0.16	<0.67	4500	<16	<0.01	26	7.6	7.2	<0.64	170
SOI	- Dust Diorago Prior P	A2	10/05/95	0917	<14	27	340	<0.18	<0.68	4300	30	<0.01	34	17	8.6	<0.72	170
SO1	er a manual a la la la la la la manusa des la departa manda de la camana de la	A2 A3	10/05/95	0919	<15	24	370	<0.18	<0.33	5000	<10	<0.01	26	<2.9	8.6	<0.72	98
SOI	Dust Storage Area B	RI	10/05/95	0926	<9.8	26	290	<0.16	<0.69	3800	30	<0.01	36	27	2	<0.66	140
SOI	The state of the s	<u>F</u> 2	10/05/95	0928	<7.0	29	310	<0.16	<0.67	3100	46	<0.01	36 26	4	2	<0.64	170
SO1		B1 B2 B3 C1 C2	10/05/95	0930		26 29 26	100	0.6	<0.37	560	42	<0.01	21	<3.0	8.3	<0.75	130
SOI	Dust Storage Area C		10/05/95	0935	<4.8 <8.7	<u>20</u>	360	0.17	<0.63	3700	41	0.01	23 .	14	2.1	<0.57	270
SO1	The Divingo Mind Q	<u>~.</u> 	10/05/95		<8.7 <2.3	33	250	<0.16	1.4	2500	90	<0.01	56	4.2	1.8	<0.63	310
SO1 SO1 SO1	ense de la serie de la companión de la compani		10/05/95	0937 0939		18	280	<0.20	2.9	2800	60	<0.01	47	15	2.4	<0.79	310
<u>501</u>	Dust Storage Area D	C3 D1 D1	10/05/95		<8.7 <10	18 23	280 250 350	0.25	1.6	2200	1600	0.021	28	5.6	2.2	<0.56	470
SOI	Past Otolago Alea D	ກາ	10/05/95	0943 0943	<10 <4.0	- 22	350	0.29	2.3	2100	1700	0.029	30	2	1.9	<0.96	470
SO1		Di	10/05/95	0943	<11	20	340	0.34	1.8	1700	1400	0.031	32	<1.7	1.9	<0.86	700
SO1			10/05/95	0943	<3.5	20	240	0.26	2.4	1700	1300	0.03	34	<1.7	1.9	<0.87	840
201		D1 D2	10/05/95	0945	_<5.8	25	220	0.25	<1.4	1900	170	0.025	21	10	2.2	<0.72	250
SO1 SO1 SO1 SO1 SO1		. D2 D3	10/05/95		<9.1			<0.14	<0.82	2300	48	<0.01	54	<2.3	2.2	<0.56	270
SO1_	Dust Transfer / Processing Area	PA-1	10/05/95	0947	<7.3	26 18	570 220	<0.19	1.8	1200	16000	0.028	37	<3.0	2.2	<0.76	540
301 ·	Dust Transfer / Processing Area	LW-I	10/03/93	0948	<1.3	10	220	~V.17	1.0	1200	10000	01020				70.70	المسدين تنسب

Table B-1 (cont.) Summary of October 1995 Sample Results

IEPA Area ID.	Sample Area	Sample ID#	Date	Time	Antimony	Arsenic	Barium	Beryllium	Cadmium	: Chromium :	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
	<u>-</u>	·		(24 HR)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SO1		PA-1	10/05/95	0948	<6.3	27	230	0.32	1.5	1900	12000	0.021	21	<1.8	2.6	<0.90	560
SO1		PA-1	10/05/95	0948	<12	22	220	0.36	1.8	1500	20000	0.022	28	<1.8	4.9	<0.90	1200
SO1		PA-1	10/05/95	0948	<9.9	18	87	0.78	1.4	1800	7600	0.026	30	<1.7	4.8	<0.84	610
SOI		PA-2	10/05/95	0951	<11	48	340	0.22	1.6	2100	310	0.013	41	12	1.7	<0.68	330
SO1		PA-3	10/05/95	0953	. <2.6	18	290	<0.19	1.9	1700	670	<0.01	32	5.2	22	<0.78	410
SO1	Trailer Loading Ramp	TLR-1	10/05/95	0955	<3.8	19	230	0.36	5.1	1700	350	0.087	49	6.8	2.2	<0.55	1200
SOI		TLR-2	10/05/95	0957	<2.1	12	160	<0.18	12	1400	550	0.024	30	5.3	3.3	<0.74	2500
SO1_		TLR-2	10/05/95	0957	<5.1	14	95	<0.24	5.6	990	270	0.026	24	2.2	2.2	<0.97	1400
SO1		TLR-2	10/05/95	0957	<7.2	13	88	<0.20	6	1300	300	0.053	22	. 2	2.2	<0.79	1700
SO1		TLR-2	10/05/95	0957	<3.5	14	96	<0.19	18	1000	640	0.012	70	1.6	11	<0.75	7700
SO1		TLR-3	10/05/95	. 0959	<0.75	11	94	<0.19	2.1	560	130	0.014	14	3.0	0.37	<0.75	500
SO1	Slag Yard Background	! SLAGBG-1	10/05/95	0813	<1.9	28	200	0.22	3.3	2000	300	0.044	31	<2.9	1.3	<0.73	<u>660 ·</u>
SO1		SLAGBG-2	10/05/95	0815	<12	14	35	<0.18	<0.63	380	170	0.021	190	5.3	0.48	<0.74	240
SOI		SLAGBG-3	10/05/95	0817	<4.3	5.7	94	<0.15	1.3	800	180	0.056	42	3.7	0.71	<0.60	330
SO1 :		SLAGBG-4	10/05/95	0848	<1.8	25	240	<0.18	2.1	2200	310	0.011	38	15	1.6	<0.72	420
SO1		SLAGBG-5	10/05/95	0834	<4.2	40	290	0.16	<0.57	3200	55	<0.009	45	11	1.6	0.55	290
<u>S</u> O1		SLAGBG-6	10/05/95	0838	<0.68	24	160	0.17	<1.5	1400	86	0.11	32	<2.7	1.6	< 0.68	410
SO1		SLAGBG-7	10/05/95	0840	<5.2	25	220	0.25	2.3	2000	1600	0.071	30	9.5	1.2	<0.62	290
SO1		SLAGBG-7	10/05/95	0840	<6.6	20	150	0.24	1.9	1400	87	0.082	84	2.2	1.9	<0.94	480
SO1		SLAGBG-7	10/05/95	0840	<3.3	21	180	<0.24	7.3	<u>j · 1500 '</u>	210	0.071	41	2	1.8	<0.97	490
SO1		SLAGBG-7	10/05/95	0840	<5.6	26	140 ·	0.38	2.3	940	58	0.078	66	<1.9	1.8	<0.94	340
SOI		SLAGBG-8	10/05/95	0843	<0.70	17	230	<0.18	<1.2	1900	120	0.012	26	• 14	1.7	<0.70	350
SO1		SLAGBG-9	10/05/95	0846	<2.6	23	220	0.41	1.5	1600	92	<u> <0.009</u>	26	7.1	0.91	<u> <0.59</u>	310





Daily Analytical Laboratories Peoria, Illinois

KEYSTONE STEEL & WIRE CO.

OCTOBER 5, 1995 SOILS

DECEMBER 18, 1995

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AND

COVER PAGE



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KEYSTONE STEEL & WIRE CO.

OCTOBER 5, 1995 SOILS

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1621 W. Candletree Drive Tel. (309) 692-5252 Peoria, Illinois 61614 (800) 752-6651

To: Keystone Steel & Wire Co.

Date: December 18, 1995

Inorganics Case Narrative

Fifty four soil samples were received on October 5, 1995 for trace metals analysis in accordance with our Level II QC protocol. The sample were analyzed for Antimony, Barium, Beryllium, Cadmium, Chromium, Lead, Nickel, Silver and Zinc (SW-846 Method 6010A); Arsenic (SW-846 Method 7060A); Mercury (SW-846 Method 7471A): Selenium (analyzed by SW-846 Method 6010A and Method 7741A); and Thallium (SW-846 Method 7841). All samples were prepared using SW-846 Method 3050A. On October 31, 1995 it was requested that seven of the original fifty four samples be re-analyzed in triplicate.

All analyses were performed according to protocol. The original set of samples were analyzed between October 14 and 24, 1995. The re-analyses were performed between November 7 and 16, 1995.

Matrix spike analyses was performed on the nine samples listed in the Spike Sample table. The matrix spike analyses did yield some results outside of the required QC limits. These samples were then analyzed with an analytical (post digestion) spike. All recovery data are contained in the appropriate QC form. In addition, six samples, of the original fifty four, were analyzed in duplicate. This precision data is contained in the duplicate QC forms.

Sincerely,

DALLY ANALYTICAL LABORATORIES

Jeffrey M. Loewe

Quality Assurance Coordinator - Inorganics

JML:sah



Inorganic Analysis Cover Page

Keystone Steel & Wire Co.

Date: December 18, 1995

Contents Summary

Client Sample ID	Lab Sample ID	Date Received	Final Date of Analysis
TB-1	95-10-232-01	10-05-95	10-24-95
TB-2	95-10-232-03	10-05-95	10-24-95
TB-3	95-10-232-04	10-05-95	10-24-95
T4-1	95-10-232-06	10-05-95	10-24-95
T4-2	95-10-232-07	10-05-95	10-24-95
T4-3	95-10-232-08	10-05-95	10-24-95
T6-1	95-10-232-09	10-05-95	10-24-95
T6-2	95-10-232-10	10-05-95	10-24-95
T6-3	95-10-232-11	10-05-95	10-24-95
SCRAPBG-1	95-10-232-12	10-05-95	10-23-95
SCRAPBG-2	95-10-232-13	10-05-95	10-23-95
SCRAPBG-3	95-10-232-15	10-05-95	10-23-95
R3-1	95-10-232-16	10-05-95	10-23-95
R3-2	95-10-232-17	10-05-95	10-23-95
R3-3	95-10-232-18	10-05-95	10-23-95
R4-1	95-10-233-01	10-05-95	10-24-95
R4-2	95-10-233-02	10-05-95	10-24-95
R4-3	95-10-233-03	10-05-95	10-24-95
R5-1	95-10-233-04	10-05-95	10-24-95



Inorganic Analysis Cover Page

Keystone Steel & Wire Co.

Date: December 18, 1995

Contents Summary

Client Sample ID	Lab Sample ID	Date Received	Final Date of Analysis
R5-2	95-10-233-05	10-05-95	10-24-95
R5-3	95-10-233-06	10-05-95	10-24-95
R6-1	95-10-233-08	10-05-95	10-24-95
R6-2	95-10-233-09	10-05-95	10-24-95
R6-3	95-10-233-11	10-05-95	10-24-95
TCA-1	95-10-233-12	10-05-95	10-24-95
TCA-2	95-10-233-13	10-05-95	10-24-95
TCA-3	95-10-233-14	10-05-95	10-24-95
A-1	95-10-233-15	10-05-95	10-24-95
A-2	95-10-233-16	10-05-95	10-24-95
A-3	95-10-233-17	10-05-95	10-24-95
B-1	95-10-234-01	10-05-95	10-24-95
B-2	95-10-234-03	10-05-95	10-24-95
B-3	95-10-234-04	10-05-95	10-24-95
C-1	95-10-234-06	10-05-95	10-24-95
C-2	95-10-234-07	10-05-95	10-24-95
C-3	95-10-234-08	10-05-95	10-24-95
D-1	95-10-234-09	10-05-95	10-25-95
D-2	95-10-234-10	10-05-95	10-25-95
		•	



SPIKE SAMPLE ANALYSES

TB-3 R3-1 R6-2 B-3 TLR-1 SLAGBG-8 T6-3 D-1 TLR-2

CHAIN-OF-CUSTODY

CHAIN OF CUSTODY RECORD

DA Daily Analytical Laboratories

CLIENT OR SITE: KEYSTONE STEEL).				ALL	T0.7	AL	MET	TA LS				V. Candl 09) 692-		rive Peoria, Illinois 61614 (800) 752-6651				
CLIENT REPRESENTATIVE: (JACK)	JOHN K	. SHEL	LEY			1/2		ANAL'											
PHONE NO: (309) 697-	7538	,		вотпея	89	ر نگر		,,		'									
SAMPLED BY: (Signature) Julie R. Spelley				NO. OF BO	As	2.6	Ha, N'	A 7	`						REMARK	S OR OF	RSERVATIONS.		
DESCRIPTION (4)	DATE	TIME 24h Tim	TYPE (2)	2	25	Se. (Pb, H	Se,	W, W						SAMPLE	REMARKS OR OBSERVATIONS: SAMPLE TYPE: SLUDGE, LIQUID, FILTERED, UNFILTERED, ETC.			
TB-1	10-5-45	0730	56:15.18.6"	1	1	~	1	1	/						So	S01L5/SLAG			
TB-2	10-5-95	0729	(r	ı	V	1		1	V						1	,			
TB-3	10-5-95	0727hr	11	1	V	\	/	V	1						1	ſ			
T4-1	10-5-95	0732	11	1	1	/			6						/	,			
T4-2	10.5-95	0734	11		V	1	\	/	V										
T4-3	10-5-95	0736	T i	1	V	/	/	1	\							٢	·		
T6-1	10-5-95	0739	1.9	1	1	2	1	1	V							•			
T6-2	10-5-95	6741	1 e	1	V	~	/	/	V							(
76-3	10-5-95	0742	"	1	/	/	V		/							(
SCRAPBG-1	10-5-95	0752	"		V	V	/	/	/						1	(
SCRAPBG-2	10-5-95	0754	1f	1	1	/	/	1	1						,	r			
SCRAPBG-3	10-5-95	0757	"	1	V	1	/	/	0							r			
R3-1	10-5-95	0759	10	1	V	/	/		1						1	,			
R3-2		080Z	tf	1		V	i		1						′1				
R3-3	10-5-95	0804	11	1		1	1	1	V						"				
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY	(Sígi	nature)				RELI	NQUI	SHED E	BY:(Sig	natur	e)	DATE	TIME	RECEIVED BY:(Signature)		
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED B	Y:(Sigi	nature)		RELINQUISHED BY:(Signature)						natur	DATE	TIME	RECEIVED BY:(Signature)			
RELINQUISHED BY:(Stanature) Size La Stanting DISTRIBUTION: Original accompanies		TIME //:00					BY:			ATE		ME CO	REM	IARKS	:		•		

(1) Sufficient information to uniquely identify sample

(2) Composite, Grab, Bailed/Device

F CUSTODY RECORD

DA Daily Analytical Laboratories

	CLIENT OR SITE: KEYSTONE STEEL	<i>co.</i>			ALL	זטד	AL 1	in ETAL	٤.5			1621 W Tel. (30			rive Peoria, Illinois 61614 (800) 752-6651		
f	KEYSTONE STEEL CLIENT REPRESENTATIVE: (SACK) J	DHN R.	SHEL	LEY			S	•		YSIS REC		TED					
	PHONE NO: (309) 697- 75	<u> 38</u>			вотпея	B	1997	, , <u>, , , , , , , , , , , , , , , , , </u>	2								
	SAMPLED BY: (Signature)	PLED BY: (Signature) John R. Shelley			NO. OF 80	As 6	6,0	Ha		>					REMARK	S OR OE	SERVATIONS:
	DESCRIPTION (1)	DATE	TIME	TYPE (2)		28			-	\ . प					SAMPLE	TYPE:	SLUDGE, LIQUID, TERED, ETC.
01	R4-1 3	10-64-45	0820	SURFICE-6"		V	~	i		~					Se	115	15446-
ſ	R4-2	13 5 10- 25 -95	n872	71		V	i i	i	V	~						er.	
	R4-3 54	10-25-95	C823	. 11		V	· .	V	/	-						(1	
		10-5-95		11	1		V		-	1						11	
. [R5-2	10-5-95	0853	11	1	~	2	~	1	1						/1	
ا ده	R5-3	10-5-95	6855	1 11	1	V		V	~							4	
	R6-1	10-5-95	0858	11	1	~	_	ر		1						11	
10	R6-Z	10-5-45	6859	11	1	ر: ا	من	-	"	1						11	
	R6-3	10-5-45	1090]	11	1	<u></u>	سن ا	-	~	<u></u>						1,	
	TCA-1	10-5-95	0905	- 11	1	ے ا	~	نرد	·/	"						11	
00000	TC A - Z	10-5-95	0909	'1	1	<u></u>	~	~	/	1						rf	
0	TCA-3	10-5-95	0910	1,	1	V	V	1	/							4	· · · · · · · · · · · · · · · · · · ·
00	AI	10-5-95	0915	11	1			~	1				\perp			",	
7:	A 2	10-5-95		//	1	V	~	"	1				$ \bot $			"	
	A3	10-5-95	0919	/!	1	سمتع	/		/	1						*1	
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	RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED B	Y:(<i>Sign</i>	nature)				RELINC	JUISH	IED BY:(Sign	nature)	DATE	TIME	RECEIVED BY:(Signature)
-	RELINOUISHED BY: (Signature) Olat (Skelley DISTRIBUTION: Original accompanies si		11:00	RECEIVED FO	OR LAI	BORAT	ORY I	3Y:		DAT 10-5	-95-	TIME		REMARKS:	<u></u>	<u> </u>	

(1) Sufficient information to uniquely identify sample (2) Composite, Grab, Balled/Device

-01

CHAIL OF CUSTODY RECORD



A Daily Analytical Las ratories

CLIENT OR SITE: 1621 W. Candletree Drive Peoria, Illinois 61614 KEYSTONE STEEL & WIRE CO.
CLIENT REPRESENTATIVE: GACK) JOHN R. SHEZLEY Tel. (309) 692-5252 (800) 752-6651 ALL TOTAL METALS **ANALYSIS REQUESTED** PHONE NO: (309) 697-7538 \mathcal{S}_{a} SAMPLED BY:\Signature) 늉 As. REMARKS OR OBSERVATIONS: SAMPLE TYPE: SLUDGE, LIQUID, 28 DESCRIPTION (1) DATE TIME **TYPE (2)** FILTERED, UNFILTERED, ETC. SULFAKE_G' BI /SLAG-0926 10-5-45 82 10-5-95 0928 11 " B3 10-5-95t 0930 11 1 10-5-95 0935 CI 11 10-5-95 0937 11 11 C 2 1, **C3** 10-5-95 0939 "1 10-5-45 0943 01 1 ft 02 10-5-95 0945 11 11 03 10-5-45 0947 1 ٠, PA-1 10-5-05 0948 11 " PA-Z " 15 10-5-45 0.951 PA-3 10-5-95 0953 1, 11 10.5-95 09.55 r 11 TLR-1 /1 " 0957 10-5-95 0959 16-5-85 t i RELINQUISHED BY:(Signature) DATE TIME RECEIVED BY:(Signature) RELINQUISHED BY:(Signature) DATE TIME RECEIVED BY:(Signature) RELINQUISHED BY:(Signature) DATE TIME RECEIVED BY:(Signature) RELINQUISHED BY:(Signature) DATE RECEIVED BY:(Signature) TIME RELINQUISHED BY: (Gignature) DATE TIME RECEIVED FOR LABORATORY BY: DATE TIME REMARKS: *P*O 5-95 11:00 10-5-95 11:00

DISTRIBUTION: Original accompanies shipment and final report

(2) Composite, Grab, Bailed/Device

-01

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⁽¹⁾ Sufficient information to uniquely identify sample

CHAIL OF CUSTODY RECORD



DA Daily Analytical La Pratories

CLIENT OR SITE:																	rive Peoria, Illinois 61614
CLIENT REPRESENTATIVE: (SACK)	. & WIA	E C	0,			ALI	. 7	OTAL	m	ETA	-63		10	H. (30	09) 692-	5252	(800) 752-6651
CLIENT REPRESENTATIVE: (SACK)	JOHN R.	SKELLE	'Y			Z /		ANAL'	YSIS F	REQUE	STED						
PHONE NO: (304) 697-75	T38			BOTTLES	Ba	(12	1,	7									
SAMPLED BY:(Signature)	A. She	lley		NO. OF BO'	As, 6	a C	Ho. 1	Je. 7	۶.						REMARK	S OR OE	SERVATIONS:
DESCRIPTION (1)	DATE	DAME	TYPE (2)	_	56,	-	.		7	L					SAMPLE	TYPE:	SLUDGE, LIQUID, TERED, ETC.
SLAG BG -1	10-5-95	08/3	SULFILE-6"	1	V		U	-1							SOI	15/	SLAG
SLA686-2	10-5-45	08/5	ır	1			V	V	1							//	
SLAGBG-3	10-5-45	6817	ľſ	1		/	~		/							"	
SLAG BG-4	10-5-95	0848	11	1		V		1	~		<u> </u>			<u> </u>		fr	
SLAG BG -5	10-5-45	0834	ľ¢	1		V	~		1							11	
SLAG-BG-6	10-5-95	0838	11	1	8		V		1	<u> </u>						11	
SLAG 86 -7	10-5-95	0840	11	1	/	V	2	/	1							//	
SLAG BG -8	10-5-95	0843	/1	1	/	V	1	/	V	<u> </u>						/(
SLAG BG-9	10-5-45	0846	11	1	/	6	/	/	V						/	"	
						_							<u> </u>	 	 	 ,	
9 0 0 0											-						,
																	
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RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED B	Y:(Sigi	nature)	_			RELI	NQUI	SHED 1	BY:(<i>Si</i> į	gnatu	re)	DATE	TIME	RECEIVED BY:(Signature)
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED B	Y:(<i>Sigi</i>	nature)				RELI	NQUI	SHED 1	BY:(<i>Si</i>	gnatu	re)	DATE	TIME	RECEIVED BY:(Signature)
RELINQUISHED BY: (Signature)	DATE	TIME //iec	RECEIVED F				BY:			ATE 5-85	7/	IME	REN	MARKS	3:	1	
DISTRIBUTION: Original accompani	es shipment a	nd final rep	ort	-													

(2) Composite, Grab, Bailed/Device

⁽¹⁾ Sufficient information to uniquely identify sample

TABULATED ANALYTICAL RESULTS



1621 W. Candletree Drive Tel. (309) 692-5252 Peoria, Illinois 61614 (800) 752-6651

Keystone Steel & Wire Co. 7000 SW Adams Street Peoria, IL 61641

Attn: Mr. Jack Skelley

Work ID: Soils/Slag PO#: S30368 Date Received: 10/05/95 Date of Report: 10/27/95 Work Order: 95-10-232

Job Number: # of Samples: 25

Test	**	TB-1	TB-2	TB-3	Ť4-1
	Units	10/05/95 07:30	10/05/95 07:29	10/05/95 07:27	10/05/95 07:32
Silver, Total		10/03/33 07.30	10/03/33 07.23	10,03,33 07.27	10,03,33 0,.32
Dazvez, 10001	mg/kg	1.7	0.90	0.63	1.9
Arsenic, Total					
	mg/kg	14	8.5	37	22
Barium, Total	**	• • •			222
- 111 m.	_mg/kg	240	120	73	320
Beryllium, Tota	mg/kg	<0.16	<0.14	0.36	<0.16
Cadmium, Total	ug/ kg	CU.10	(0.14	0.30	(0.10
Cadillani, Total	mg/kg	2.3	2.6	6.9	3.0
Chromium, Total					
•	mg/kg	2500	1300	290	3300
Mercury, Total				•	
	mg/kg	0.012	0.071	0.036	0.010
Nickel, Total			••	2.0	14
* 3 M- b - 3	mg/kg	26	19	38	14
Lead, Total	mg/kg	94	120	300	100
Antimony, Total		24	120	500	200
American, rocar	mg/kg	<8.5	<5.7	<0.60	<11
Selenium, Total					
•	mg/kg	6.4	3.2	<2.4	12
Thallium, Total					
	mg/kg	<0.62	<0.56	<0.60	<0.65
Zinc, Total	/3		620	1400	0.00
Water Disease	mg/kg	500	630	1400	860
Metals Digest,	date of prep.	10/05/95	10/05/95	10/05/95	10/05/95
		10/03/93			
Test		T4-2	T4-3	T6-1	T6-2
	Units				
		10/05/95 07:34	10/05/95 07:36	10/05/95 07:39	10/05/95 07:41
Silver, Total	mg/kg	1.6	1.6	<0.34	<0.28
Arsenic, Total	mg/kg	1.0		(0.34	(0.20
Arsenic, local	mg/kg	20	18	6.5	4.6
Barium, Total		20		4.5	•
Julium, 10144	mg/kg	230	260	27	95
Beryllium, Tota					•
- -	mg/kg	<0.15	<0.16	<0.17	<0.14
Cadmium, Total					
	mg/kg	<0.74	<0.93	1.6	<0.92



Page 2 Received: 10/05/95	DAILY LABS 12/18/95	· REPORT 14:49:34	Work Orde Continued	r # 95-10-232 From Above
Test Units	T4-2	T4-3	T6-1	T6-2
	10/05/95 07:34	10/05/95 07:36	10/05/95 07:39	10/05/95 07:41
Chromium, Total mg/kg	2400	3000	27	49
Mercury, Total mg/kg Nickel, Total	<0.009	<0.01	<0.01	<0.01
mg/kg Lead, Total	17	28	5.9	6.0
mg/kg Antimony, Total	62	70	93	40
mg/kg Selenium, Total	<12	<9.7	<0.69	<0.56
mg/kg Thallium, Total	3.9	8.0	<2.8	<2.2
mg/kg Zinc, Total	<0.59	<0.62	<0.69	<0.56
mg/kg Metals Digest, nonaqueous	250	260	250	250
date of prep	. 10/05/95	10/05/95	10/05/95	10/05/95
Test	T6-3	SCRAPBG-1	SCRAPBG-2	SCRAPBG-3
Units	10/05/95 07:42	10/05/95 07:52	10/05/95 07:54	10/05/95 07:57
Silver, Total mg/kg	1.6	1.3	1.1	1.6
Arsenic, Total mg/kg	14	17	17	24
Barium, Total mg/kg	170	170	140	220
Beryllium, Total mg/kg	<0.17	0.28	0.68	0.31
Cadmium, Total mg/kg	5.7	2.2	3.0	2.9
Chromium, Total mg/kg	2100	2000	580	1800
Mercury, Total mg/kg Nickel, Total	0.057	0.022	0.027	0.033
mg/kg Lead, Total	18	39	16	20
mg/kg Antimony, Total	230	86	150	140
mg/kg Selenium, Total	<4.6	<9.1	<1.8	<2.2
mg/kg Thallium, Total	<1.4	<2.3	<2.5	3.3
mg/kg Zinc, Total	<0.68	<0.57	<0.62	<0.62
mg/kg	2000	360	440	940



Page 3 Received: 10/05/95	DAILY LABS 12/18/95	REPORT 14:49:34	Work Orde Continued	r # 95-10-232 From Above
Test Units	T6-3	SCRAPBG-1	SCRAPBG-2	SCRAPBG-3
	10/05/95 07:42	10/05/95 07:52	10/05/95 07:54	10/05/95 07:57
Metals Digest, nonaqueous date of p		10/05/95	10/05/95	10/05/95
Test	R3-1	R3-2	R3-3	
Units	10/05/95 07:59	10/05/95 08:02	10/05/95 08:04	
Silver, Total mg/kg	1.5	1.6	1.8	
Arsenic, Total mg/kg	22	21	17	
Barium, Total mg/kg	200	190	170	
Beryllium, Total mg/kg	0.48	0.34	0.33	
Cadmium, Total mg/kg	2.6	3.7	10	
Chromium, Total mg/kg	1900	1400	1400	
rcury, Total mg/kg	0.19	0.022	0.039	
Nickel, Total mg/kg	35	42	41	
Lead, Total mg/kg	190	210	640	
Antimony, Total mg/kg	<7.7	<8.3	<0.61	
Selenium, Total mg/kg	9.2	<2.7	<2.4	
Thallium, Total mg/kg	<0.60	<0.67	<0.61	
Zinc, Total mg/kg	620	820	8200	
Metals Digest, nonaqueous date of p		10/05/95	10/05/95	
	,,	• •	• •	

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Certified By:

Jeffrey W. Leewe Coordinator

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Peoria, Illinois 61614 (800) 752-6651

Keystone Steel & Wire Co. 7000 SW Adams Street Peoria, IL 61641

Date Received: 10/05/95
Date of Report: 10/30/95
Work Order: 95-10-233

Job Number: # of Samples: 23

Attn: Mr. Jack Skelley

Work ID: Soils/Slag PO#: 830368

. Ο π .	550500				
Test Units		R4-1	R4-2	R4-3	R5-1
Silver, Total		10/05/95 08:20	10/05/95 08:22	10/05/95 08:23	10/05/95 08:51
mg/k Arsenic, Total	g	1.6	<0.34	2.7	6.3
mg/k Barium, Total	g	15	6.9	9.5	17
mg/k	g	73	31	120	260
Beryllium, Total mg/k	g	<0.16	<0.17	0.31	0.17
Cadmium, Total mg/k	g	11	3.0	9.2	2.5
Chromium, Total mg/k	g	500	210	1100	1900
Mercury, Total mg/k	g	0.039	0.018	0.069	0.023
Nickel, Total mg/k	g	140	66	41	38
Lead, Total mg/k	g	550	190	490	180
Antimony, Total mg/k	g	<0.62	<0.84	<3.1	<0.69
Selenium, Total mg/k	g	<2.5	<2.7	<2.7	14
Thallium, Total mg/k	g	<0.62	<0.68	<0.68	<0.69
Zinc, Total mg/k		3000	680	2000	610
Metals Digest, nonaq date	ueous of prep.	10/05/95	10/05/95	10/05/95	10/05/95
Test		R5-2	R5-3	R6-1	R6-2
Units		10/05/95 08:53	10/05/95 08:55	10/05/95 08:58	10/05/95 08:59
Silver, Total mg/kg	3	1.5	6.8	3.5	<0.35
Arsenic, Total mg/kg	3	9.6	20	8.9	11
Barium, Total mg/kg	3	160	200	120	82
Beryllium, Total mg/kg	3	<0.16	0.18	<0.19	<0.17
Cadmium, Total mg/kg	3	1.6	3.9	<0.83	2.2



Page 2 Received: 10/05/95		DAILY LABS	REPORT 14:49:40	Work Order # 95-10-233 Continued From Above	
Test	Units	R5-2	R5-3	R6-1	R6-2
		10/05/95 08:53	10/05/95 08:55	10/05/95 08:58	10/05/95 08:59
Chromium, Total	mg/kg	1600	2000	1400	800
Mercury, Total Nickel, Total	mg/kg	<0.01	0.023	0.022	<0.01
Lead, Total	mg/kg	41	30	25	13
Antimony, Total	mg/kg	150	420	88	110
Selenium, Total	mg/kg	<5.2	<3.7	<3.9	<2.7
Thallium, Total	mg/kg	5.7	<2.8	<3.0	4.4
Zinc, Total	mg/kg	<0.63	<0.71	<0.75	<0.69
•	mg/kg	360	960	220	220
Metals Digest,	date of prep.	10/05/95	10/05/95	10/05/95	10/05/95
Test	:	R6-3	TCA-1	TCA-2	TCA-3
	Units	10/05/95 09:01	10/05/95 09:05	10/05/95 09:08	10/05/95 09:10
Silver, Total	mg/kg	. 4.8	6.7	6.4	5.4
Arsenic, Total	mg/kg	18	24	18	7.3
Barium, Total	mg/kg	200	190	240	56
Beryllium, Tota	l mg/kg	<0.16	0.19	<0.16	<0.18
Cadmium, Total	mg/kg	<2.5	<0.66	2.9	<0.18
Chromium, Total		2100	3000	2100	370
Mercury, Total	mg/kg	<0.01	<0.01	<0.01	<0.01
Nickel, Total	mg/kg	110	31	110	43
Lead, Total	mg/kg	230	43 .	110	9.2
Antimony, Total		<7.6	<11	<10	<1.5
Selenium, Total		14	14	13	<2.9
Thallium, Total					•
Zinc, Total	mg/kg	<0.74	<0.62	<0.63	<0.72
	mg/kg	320	280	370	30



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	Page 3 Received: 10	/05/95	DAILY LABS 12/18/95	REPORT 14:49:40	Work Orde: Continued	r # 95-10-233 From Above
	Test	Units	R6~3	TCA-1	TCA-2	TCA-3
	Metals Digest		10/05/95 09:01	10/05/95 09:05	10/05/95 09:08	10/05/95 09:10
		date of prep.	10/05/95	10/05/95	10/05/95	10/05/95
	Test	Units	A-1	A-2	A-3	
	Silver, Total		10/05/95 09:15	10/05/95 09:17	10/05/95 09:19	
	-	mg/kg	7.2	8.6	8.6	
	Arsenic, Total Barium, Total	mg/kg	19	27	24	
	Beryllium, To	mg/kg	350	340	370	
	Cadmium, Tota	mg/kg	<0.16	<0.18	<0.18	
	Chromium, Tota	mg/kg	<0.67	<0.68	<0.33	
(ercury, Total	mg/kg 1	4500	4300	5000	
	Nickel, Total		<0.01	<0.01	<0.01	
	Lead, Total	mg/kg	26	34	26	
	Antimony, Tota		<16	30	<10	
	Selenium, Tota	mg/kg al mg/kg	<12 7.6	<14 17	<15 <2.9	
	Thallium, Tota	<u> </u>	<0.64	<0.72	<0.72	
	Zinc, Total	mg/kg	170	170	98	
	Metals Digest		10/05/95	10/05/95	10/05/95	
				^		

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Certified By:

Jefftey W. Loewe Quality Assurance Coordinator

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Peoria, Illinois 61614 (800) 752-6651

Keystone Steel & Wire Co. 7000 SW Adams Street Peoria, IL 61641

Date Received: 10/05/95 Date of Report: 10/30/95 Work Order: 95-10-234

Job Number:

Attn: Mr. Jack Skelley

of Samples: 25

Work ID: Soils/Slag
PO#: S30368

Test	Units	B-1	B-2	B-3	C-1
	Onica	10/05/95 09:26	10/05/95 09:28	10/05/95 09:30	10/05/95 09:35
Silver, Total		20,03,32 03.20	20,00,00	20,00,00	20,00,00
	mg/kg	2.0	2.0	8.3	2.1
Arsenic, Total					
	mg/kg	26	29	26	47
Barium, Total	mg/kg	290	310	100	360
Beryllium, Tota		250	310	100	300
	mg/kg	<0.16	<0.16	0.60	0.17
Cadmium, Total					
	mg/kg	<0.69	<0.67	<0.37	<0.63
Chromium, Total		2000	2100		2700
_Mercury, Total	mg/kg	3800	3100	560	3700
Mercury, rocar	mg/kg	<0.01	<0.01	<0.01	0.010
Nickel, Total					
	mg/kg	36	26	21	23
Lead, Total					
Burkimana Maka'	mg/kg	30	46	42	41
Antimony, Total	mg/kg	<9.8	<7.0	<4.8	<8.7
Selenium, Total		13.10	47.00	1	151,
	mg/kg	27	4.0	<3.0	14
Thallium, Total					
_, _,,	mg/kg	<0.66	<0.64	<0.75	<0.57
Zinc, Total	mg/kg	140	170	130	270
Metals Digest,		140	170	130	270
·	date of prep.	10/11/95	10/11/95	10/11/95	10/11/95
					·
Test		C-2	C-3	D-1	D-2
	Units				
		10/05/95 09:37	10/05/95 09:39	10/05/95 09:43	10/05/95 09:45
Silver, Total	mg/kg	1.8	2.4	2.2	2.2
Arsenic, Total	"¤/ ^\	2.0		2.2	4.4
	mg/kg	33	18	23	16
Barium, Total					
	mg/kg	250	280	250	220
Beryllium, Tota				.	
Cadmium, Total	mg/kg	<0.16	<0.20	0.25	0.25
Caumium, 10tal	mg/kg	1.4	2.9	1.6	<1.4
		# + T	,	1.0	74.3



Page 2 Received: 10/05/95		DAILY LABS 12/18/95	REPORT 14:49:47	Work Order # 95-10-234 Continued From Above	
Test	Jnits	C-2	C-3	D-1	D-2
	Juice	10/05/95 09:37	10/05/95 09:39	10/05/95 09:43	10/05/95 09:45
Chromium, Total	mg/kg	2500	2800	2200	1900
Mercury, Total	mg/kg	<0.01	<0.01	0.021	0.025
Nickel, Total	mg/kg	56	47	28	21
Lead, Total	mg/kg	90	60	1600	170
Antimony, Total Selenium, Total	mg/kg	<2.3	<8.7	<10	<5.8
•	mġ/kg	4.2	15	5.6	10
Thallium, Total	mg/kg	<0.63	<0.79	<0.56	<0.72
Zinc, Total Metals Digest, r	mg/kg	310	310	470	250
metals Digest, I	date of prep.	10/11/95	10/11/95	10/11/95	10/11/95
Test		D-3	PA-1	PA-2	PA-3
	Inits	10/05/95 09:47	10/05/95 09:48	10/05/95 09:51	10/05/95 09:53
Silver, Total	6				
Arsenic, Total	mg/kg	2.2	2.0	1.7	2.0
Barium, Total	mg/kg	16	18	48	18
Beryllium, Total	mg/kg	570	220	340	290
	mg/kg	<0.14	<0.19	0.22	<0.19
	mg/kg	<0.82	1.8	1.6	1.9
•	mg/kg	2300	1200	2100	1700
-	mg/kg	<0.01	0.028	0.013	<0.01
Nickel, Total Lead, Total	mg/kg	54	37	41	32
	mg/kg	48	16000	310	670
Antimony, Total Selenium, Total	mg/kg	<9.1	<7.3	<11	<2.6
	mg/kg	<2.3	<3.0	7.0	5.2
	mg/kg	<0.56	<0.76	<0.68	<0.78
Zinc, Total	mg/kg	270	540	330	410



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Page 3 Received: 10/05/95	DAILY LABS 12/18/95	· REPORT 14:49:47	Work Orde Continued	r # 95-10-234 From Above
Test Units	D-3	PA-1	PA-2	PA-3
Metals Digest, nonaqueous	10/05/95 09:47	10/05/95 09:48	10/05/95 09:51	10/05/95 09:53
date of prep.	10/11/95	10/11/95	10/11/95	10/11/95
Test	TLR-1	TLR-2	TLR-3	
Units	10/05/95 09:55	10/05/95 09:57	10/05/95 09:59	
Silver, Total mg/kg Arsenic, Total	2.2	3.3	0.37	
mg/kg Barium, Total	19	12	11	
mg/kg Beryllium, Total	230	160	94	
mg/kg Cadmium, Total	0.36	<0.18	<0.19	
mg/kg Chromium, Total	5.1	12	2.1	
mg/kg ercury, Total	1700	1400	560	
mg/kg Nickel, Total	0.087	0.024	0.014	
mg/kg Lead, Total	49	30 550	14	
mg/kg Antimony, Total mg/kg	350 <3.8	<2.1	130 <0.75	
selenium, Total mg/kg	6.8	5.3	<3.0	
Thallium, Total mg/kg	<0.55	<0.74	<0.75	
Zinc, Total mg/kg	1200	2500	500	
Metals Digest, nonaqueous date of prep.	10/11/95	10/11/95	10/11/95	

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Certified By:

Jeffrey M. Ibewe Quality Assurance Coordinator

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Keystone Steel & Wire Co. 7000 SW Adams Street Peoria, IL 61641

Date Received: 10/05/95 Date of Report: 10/30/95

Job Number:

Work Order: 95-10-235

Attn: Mr. Jack Skelley

of Samples: 17

Work ID: Soils/Slag P O # : S30368

Test	Units	SLAGBG-1	SLAGBG-2	SLAGBG-3	SLAGBG-4
dil Mahal	Onics	10/05/95 08:13	10/05/95 08:15	10/05/95 08:17	10/05/95 08:48
Silver, Total	mg/kg	1.3	0.48	0.71	1.6
Arsenic, Total	mg/kg	28	14	5.7	25
Barium, Total	mg/kg	200	35	94	240
Beryllium, Total	mg/kg	0.22	<0.18	<0.15	<0.18
Chromium, Total	mg/kg	3.3	<0.63	1.3	2.1
. Mercury, Total	mg/kg	2000	380	800	2200
Nickel, Total	mg/kg	0.044	0.021	0.056	0.011
Lead, Total	mg/kg	31	190	42	38
Antimony, Total	mg/kg	300	170	180	310
Selenium, Total	mg/kg	<1.9	<12	<4.3	<1.8
Thallium, Total	mg/kg	<2.9	5.3	3.7	15
Zinc, Total	mg/kg	<0.73	<0.74	<0.60	<0.72
Metals Digest,	mg/kg nonaqueous	660	240	330	420
	date of prep.	10/11/95	10/11/95	10/11/95	10/11/95
Test		SLAGBG-5	SLAGBG-6	SLAGBG-7	SLAGBG-8
•	Units	10/05/95 08:34	10/05/95 08:38	10/05/95 08:40	10/05/95 08:43
Silver, Total	mg/kg	1.6	1.6	1.2	1.7
Arsenic, Total	mg/kg	40	24	25	17
Barium, Total	mg/kg	290	160	220	230
Beryllium, Total	mg/kg	0.16	0.17	0.25	<0.18
cadmium, rotal	mg/kg	<0.57	<1.5	2.3	<1.2



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Page 2 Received: 10/05/95	DAILY LABS 12/18/95	REPORT 14:49:52	Work Order # 95-10-235 Continued From Above		
Test	SLAGBG-5	SLAGBG-6	SLAGBG-7	SLAGEG-8	
Units	10/05/95 08:34	10/05/95 08:38	10/05/95 08:40	10/05/95 08:43	
Chromium, Total mg/kg	3200	1400	2000	1900	
Mercury, Total mg/kg Nickel, Total	<0.009	0.11	0.071	0.012	
mg/kg Lead, Total	45	32	30	26	
mg/kg Antimony, Total	55	86	1600	120	
mg/kg Selenium, Total	<4.2	<0.68	<5.2	<0.70	
mg/kg Thallium, Total	11	<2.7	9.5	14	
mg/kg Zinc, Total	0.55	<0.68	<0.62	<0.70	
mg/kg Metals Digest, nonaqueous	290	410	290	350	
date of p		10/11/95	10/11/95	10/11/95	
Test	SLAGBG-9				
Units	10/05/95 08:46				
Silver, Total mg/kg	0.91				
Arsenic, Total mg/kg	23				
Barium, Total mg/kg	220				
Beryllium, Total mg/kg	. 0.41				
Cadmium, Total mg/kg	1.5				
Chromium, Total mg/kg	1600				
Mercury, Total mg/kg	·<0.008				
Nickel, Total mg/kg	26				
Lead, Total mg/kg	92				
Antimony, Total mg/kg	<2.6				
Selenium, Total mg/kg	7.1				
Thallium, Total mg/kg	<0.59				
Zinc, Total mg/kg	310		•		



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Page

3

DAILY LABS

REPORT

Work Order # 95-10-235

Received: 10/05/95

12/18/95 14:49:52

Continued From Above

Test

Units

SLAGBG-9

10/05/95 08:46

Metals Digest, nonaqueous

date of prep.

10/11/95

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Jeffrey M / Loewe

Quality Assurance Coordinator

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Keystone Steel & Wire Co. 7000 SW Adams Street Peoria, IL 61641

Attn: Mr. Jack Skelley

Work ID: Soils/Slag
P O # : S30368

Date Received: 10/31/95
Date of Report: 11/17/95
Work Order: 95-10-C88

Job Number: # of Samples: 30

R3-3	T6-3	T6-3	T6-3	Test Units
10/05/95	10/05/95	10/05/95	10/05/95	Units
10,00,00	10,00,00	10, 03, 73	10,03,73	Silver, Total
1.2	4.7	3.1	3.7	mg/kg
				Arsenic, Total
24	27	23	26	mg/kg Barium, Total
190	180	130	150	mg/kg Beryllium, Total
0.39	0.23	<0.23	<0.24	mg/kg
7.2	8.4	9.8	7.2	Cadmium, Total mg/kg
1200	2200	1400	1000	Chromium, Total
1300	2300	1400	1900	mg/kg Marcury, Total
0.079	0.063	0.068	0.18	mg/kg
32	46	25	17	Nickel, Total
32	40	25	1,	mg/kg Lead, Total
380	290	300	230	mg/kg
				Antimony, Total
<6.1	<4.0	<0.93	<3.6	mg/kg
				Selenium, Total
<1.9	<1.8	<1.9	<1.9	mg/kg
				Thallium, Total
<0.97	<0.91	<0.93	<0.97	mg/kg
2700	2600	4000	2000	Zinc, Total
2700	3600	4000	2900	mg/kg Metals Digest, nonaqueous
10/31/95	10/31/95	10/31/95	10/31/95	date of prep.
R4-1	R4-1	R3-3	R3-3	Test
10/05/95	10/05/95	10/05/95	10/05/95	Units
10/03/35	10/03/33	10/03/33	10/03/33	Silver, Total
3.2	3.0	3.2	1.2	mg/kg
				Arsenic, Total
17	22	31	32	mg/kg
94	100	150	160	mg/kg
<0.24	<0.21	0.29	0.37	mg/kg
17	14	9.7	16	Cadmium, Total mg/kg
_	100	150	160 0.37	mg/kg Barium, Total mg/kg Beryllium, Total mg/kg Cadmium, Total



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Page 2 Received: 10/31/95	DAILY LABS	12/18/95 14:	REPORT 49:58	Work Order Continued F	
Test Unit		R3-3	R3-3	R4-1	R4-1
	10/05	/95 1	0/05/95	10/05/95	10/05/95
Chromium, Total mg/	kg	1700	1200	710	730
Mercury, Total mg/Nickel, Total	kg 0	.070	0.060	0.032	0.047
mg/ Lead, Total	kg	35	30	120	150
mg/ Antimony, Total	kg	330	380	500	740
mg/ Selenium, Total		<5.1	<6.1	<9.2	<8.8
mg/ Thallium, Total	_	<1.8	<1.9	<1.9	<1.9
mg/ Zinc, Total		0.92	<0.98	<0.97	<0.97
mg/ Metals Digest, nona dat	queous	2 4 00 1/95	3200 10/31/95	4900 10/31/95	8600 10/31/95
Test		R4-1	D-1	D-1	D-1
Unit Silver, Total	s 10/05	/95 10	0/05/95	10/05/95	10/05/95
mg/ Arsenic, Total	kg	3.2	1.9	1.9	1.9
mg/ Barium, Total	kg	12	22	20	21
mg/ Beryllium, Total	kg	53	350	340	240
mg/ Cadmium, Total		0.23	0.29	0.34	0.26
mg/ Chromium, Total		8.9	2.3	1.8	2.4
mg/ Mercury, Total		480	2100	1700	1700
mg/ Nickel, Total	-	.027	0.029	0.031	0.030
mg/ Lead, Total mg/		130 420	30 1700	32 1400	34 1300
Antimony, Total mg/		<5.0	<4.0	<11	<3.5
Selenium, Total mg/		<1.8	2.0	<1.7	<1.7
Thallium, Total mg/	•	0.92	<0.96	<0.86	<0.87
Zinc, Total		-			



Page 3 Received: 10/31/95		AILY LABS 12/18/9	REPORT 5 14:49:58	Work Order # 95-10-C88 Continued From Above		
Test		R4-1	D-1	D-1	D-1	
	Units	10/05/95	10/05/95	10/05/95	10/05/95	
Metalø Digest,	nonaqueous date of prep.	10/31/95	10/31/95	10/31/95	10/31/95	
		PA-1	PA-1	PA-1	TLR-2	
•	Units	10/05/95	10/05/95	10/05/95	10/05/95	
Silver, Total	mg/kg	2.6	4.9	4.8	2.2	
Arsenic, Total						
Barium, Total	mg/kg	27	22	18	14	
Beryllium, Tota	mg/kg 1	230	220	87	95	
, -	mg/kg	0.32	0.36	0.78	<0.24	
Cadmium, Total	mg/kg	1.5	1.8	1.4	5.6	
Chromium, Total	mg/kg	1900	1500	1800	990	
ercury, Total	mg/kg	0.021	0.022	0.026	0.026	
Nickel, Total	•	0.021				
Lead, Total	mg/kg	21	28	30	24	
·	mg/kg	12000	20000	7600	270	
Antimony, Total	mg/kg	<6.3	<12	<9.9	<5.1	
Selenium, Total	mg/kg	<1.8	<1.8	<1.7	2.2	
Thallium, Total		<0.90	<0.90	<0.84	<0.97	
Zinc, Total						
Metals Digest,	mg/kg nonaqueous	560	1200	610	1400	
	date of prep.	10/31/95	10/31/95	10/31/95	10/31/95	
l'est		TLR-2	TLR-2	SLAGBG-7	SLAGBG-7	
	Units	10/05/95	10/05/95 .	10/05/95	10/05/95	
ilver, Total	mg/kg	2.2	. 11	1.9	1.8	
Arsenic, Total	mg/kg	13	14	20	21	
Barium, Total	•		·			
Beryllium, Total	mg/kg l	88	96	150	180	
•	mg/kg	<0.20	<0.19	0.24 .	<0.24	
Cadmium, Total	mg/kg	6.0	18	1.9	7.3	



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Page 4 Received: 10/	/31/95	DAILY LABS 12/18/95	REPORT 5 14:49:58	Work Ord Continue	der # 95-10-C88 d From Above
Test	Units	TLR-2	TLR-2	SLAGEG-7	SLAGBG-7
		10/05/95	10/05/95	10/05/95	10/05/95
Chromium, Tota	al mg/kg	1300	1000	1400	1500
Mercury, Total	L				
Nickel, Total	mg/kg	0.053	0.012	0.082	0.071
Lead, Total	mg/kg	22	70	84	41
read, locar	mg/kg	300	640	87	210
Antimony, Tota	al mg/kg	<7.2	<3.5	<6.6	<3.3
Selenium, Tota	1				
Thallium, Tota	mg/kg il	2.0	1.6	2.2	2.0
Zinc, Total	mg/kg	<0.79	<0.75	<0.94	<0.97
•	mg/kg	1700	7700	480	490
Metals Digest,	nonaqueous date of prep.	10/31/95	10/31/95	10/31/95	10/31/95
				-	
Test	Units	SLAGBG-7			
		10/05/95	•		
Silver, Total	mg/kg	1.8			
Arsenic, Total	mg/kg	26			
Barium, Total					
Beryllium, Tot	mg/kg al	140			
Cadmium, Total	mg/kg	0.38			
·	mg/kg	2.3	•		
Chromium, Tota	l mg/kg	940			
Mercury, Total					
Nickel, Total	mg/kg	0.078			
Lead, Total	mg/kg	66			
Antimony, Tota	mg/kg	58	•		
	mg/kg	<5.6			
Selenium, Tota	l mg/kg	<1.9			
Thallium, Tota	1				
Zinc, Total	mg/kg	<0.94			
-	mg/kg	340		•	



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5 10/31/95 DAILY LABS

REPORT

Work Order # 95-10-C88

12/18/95 14:49:58

Continued From Above

Test

Units

10/05/95

SLAGBG-7

Metals Digest, nonaqueous

date of prep.

10/31/95

This is a revised report.

Certified By:

Jeffrey/ Loewe Quality Assurance Coordinator

Daily Analytical is an IEPA certified laboratory. All analyses are performed by methodology acceptable to U.S. EPA and IEPA.

Appendix C Cost Estimate Summaries

Table C-1
Stained Soil Area Remediation Cost Estimate
Assume excavation, delisting, and disposal as special waste.

	Estimate Element	Estimated Cost
1.	Prepare final closure plans (including closure confirmation sampling plans).	\$5,000
2.	Oxygen and nitrogen tanks and pipes: purge and clear, support/remove/protect to allow remediation for safety during excavation (assumes the tanks themselves will be relocated prior to excavation below their current location).	\$6,000
3.	Excavate overburden (1,600 CY). Access restricted, buried pipes to avoid.	\$2,500
4.	Soil excavation, treatment, and disposal (600 CY).(1)	
	 a. Mobilization/demobilization, project management, excavation, screening, and in-situ treatment: 1,008⁽²⁾ treated tons at \$65.84⁽³⁾ per treated ton. 	\$66,400
	 Transport and disposal as special waste: 1,008 treated tons at \$39.50⁽⁴⁾ per treated ton. 	\$39,800
5.	Treatment (delisting) verification sample analysis (once per 200 CY – assume done in conjunction with South Ditch mobilization).	\$500
6.	Closure confirmation sample analysis (full Keystone COC list).	\$19,900
7.	Engineering oversight and sample collection.	\$25,000
8.	Closure documentation reports.	\$13,000
9.	Backfill excavation area (restore 1,600 CY, and replace 600 CY).	\$8,000
	Total	\$186,100

- (1) Volume estimates updated using data obtained during characterization sampling performed in 2000.
- (2) Total tons of soil based upon a factor of 1.4 tons per CY, and 20% weight increase due to water and treatment chemical (lime/portland cement) additions.
- (3) Unit costs are based upon the actual costs incurred in 1996 (\$55.28 per ton for soil excavation/handling/treatment). These costs have been adjusted for inflation to 2001 dollars. (5)
- (4) The unit cost of transport and disposal per current pricing quote (Spring 2002). Quote includes the current tipping fee of \$28 per ton for disposal as special waste.
- Adjustment for inflation based upon the U.S. Census Bureau Annual Implicit Price Deflator for 2001 (119.1 as of June 2002). The Implicit Price Deflator for 1996 is 100. Therefore, a cost adjustment factor of 119.1/100 = 1.191 has been applied.

Table C-2
South Ditch and South Borrow Area Waste Pile Remediation Cost Estimate
Assuming sediment and soil are excavated, delisted, and disposed of as special waste.

	Estimate Element	Estimated Cost
1.	Prepare final closure plans (including closure confirmation sampling plans).	\$12,000
2.	Dewatering (initial and during excavation).	\$5,000
3.	Sediment excavation, treatment, and disposal (6,710 CY from South Ditch, and 2,565 CY from South Borrow Area Waste Pile). (1)	
	a. Mobilization/demobilization, project management, excavation, screening, and in-situ treatment: 15,582 ⁽²⁾ treated tons at \$65.84 ⁽³⁾ per treated ton.	\$1,025,900
	 Transport and disposal as special waste: 15,582 treated tons at \$39.50⁽⁴⁾ per treated ton. 	\$615,500
4.	Treatment (delisting) verification sample analysis (first 60 containers, then once per 200 CY – assume average of 13 CY per container).	\$16,900
5.	Closure confirmation sample analysis.	\$24,200
6.	Engineering oversight and sample collection.	\$45,000
7.	Closure documentation reports.	\$38,000
8.	Quarterly groundwater monitoring sample collection, analysis, and reporting. (\$20,000 per year until closure is achieved – assume closure approval within three years).	\$60,000
	Total	\$1,842,500

- (1) Volume estimates updated using data obtained during characterization sampling performed in 2000.
- (2) Total tons of soil based upon a factor of 1.4 tons per CY, and 20% weight increase due to water and treatment chemical (lime/portland cement) additions.
- Unit costs are based upon the actual costs incurred in 1996 (\$55.28 per ton for soil excavation/handling/treatment). These costs have been adjusted for inflation to 2001 dollars. (5)
- (4) The unit cost of transport and disposal per current pricing quote (Spring 2002). Quote includes the current tipping fee of \$28 per ton for disposal as special waste.
- (5) Adjustment for inflation based upon the U.S. Census Bureau Annual Implicit Price Deflator for 2001 (119.1 as of June 2002). The Implicit Price Deflator for 1996 is 100. Therefore, a cost adjustment factor of 119.1/100 = 1.191 has been applied.

Table C-3 Lower South Ditch Remediation Cost Estimate

Assuming hazardous characteristic hot-spot sediments treated and disposed of as special waste. Remainder of sediment stabilized, consolidated, and capped with an engineered barrier.

	Estimate Element	Estimated Cost
1.	Prepare final closure plan (including hazardous characteristic areas closure confirmation sampling plan, ELUCs, and long-term groundwater monitoring).	\$10,000
2.	Dewatering (initial and during excavation).	\$20,000
3.	Hazardous characteristic sediment excavation, treatment, and disposal (up to 3,520 CY from two hot spots in Lower South Ditch). ⁽¹⁾	
	 a. Mobilization/demobilization, project management, excavation, screening, and in-situ treatment: 5,914⁽²⁾ treated tons at \$65.84⁽³⁾ per treated ton. 	\$389,400
	 Transport and disposal as special waste: 5,914 treated tons at \$39.50⁽⁴⁾ per treated ton. 	\$233,600
4.	Treatment verification sample analysis (once per 200 CY – assume done in conjunction with South Ditch mobilization).	\$3,100
5.	Closure confirmation and perimeter confirmation sample analysis (assume analysis only for those constituents observed above TACO Tier 1 Industrial levels in 2000 characterization samples).	\$12,900
6.	Stabilize sediment in place for placement of engineered barrier (59,310 CY).	\$1,364,200
7.	Install geotextile (320,000 SF) and new drainage conveyance (2,600 LF).	\$258,000
8.	Install 3 ft thick soil engineered barrier (35,560 CY).	\$343,200
9.	Engineering oversight and sample collection.	\$41,800
10.	Closure documentation reports for hazardous soil excavation and TACO closure.	\$45,000
11.	Quarterly groundwater monitoring sample collection, analysis, and reporting. (\$35,000 per year until closure is achieved – assume within 4 years).	\$140,000
12.	Post-closure groundwater monitoring. Assume quarterly for 5 years, then reduce to annual frequency for 25 years. (Continue use of existing wells.)	\$425,000
	Total	\$3,286,200

- (1) Volume estimates updated using data obtained during characterization sampling performed in 2000.
- (2) Total tons of soil based upon a factor of 1.4 tons per CY, and 20% weight increase due to water and treatment chemical (lime/portland cement) additions.
- (3) Unit costs are based upon the actual costs incurred in 1996 (\$55.28 per ton for soil excavation/handling/treatment). These costs have been adjusted for inflation to 2001 dollars. (5)
- (4) The unit cost of transport and disposal per current pricing quote (Spring 2002). Quote includes the current tipping fee of \$28 per ton for disposal as special waste.
- (5) Adjustment for inflation based upon the U.S. Census Bureau Annual Implicit Price Deflator for 2001 (119.1 as of June 2002). The Implicit Price Deflator for 1996 is 100. Therefore, a cost adjustment factor of 119.1/100 = 1.191 has been applied.

Table C-4 North Ditch Staging Area Remediation Cost Estimate Assuming sediment and soil are excavated, treated, and disposed of as special waste.

	Estimate Element	Estimated Cost
1.	Prepare final closure plans (including closure confirmation sampling plans).	\$6,000
2.	Dewatering (as necessary during excavation).	\$2,000
3.	Sediment excavation, treatment, and disposal (about 2,780 CY assuming an average of two feet of impacted fill in area 150 ft x 250 ft). (1)	
[Mobilization/demobilization, project management, excavation, screening, and in-situ treatment: 4,282⁽²⁾ treated tons at \$65.84⁽³⁾ per treated ton. 	\$282,000
	 b. Transport and disposal as special waste: 4,282 treated tons at \$39.50⁽⁴⁾ per treated ton. 	\$169,200
4.	LDR treatment verification sample analysis (once per 200 CY, at \$175 per sample).	\$2,500
5.	Closure confirmation sample analysis.	\$5,000
6.	Backfill to replace removed soil (2,780 CY sand).	\$29,200
7.	Engineering oversight and sample collection.	\$20,000
8.	Closure documentation report.	\$10,000
	Total	\$525,900

- (1) Area and extent based upon 1996 data, and additional information obtained during sampling in 2002.
- (2) Total tons of soil based upon a factor of 1.4 tons per CY, and 10% weight increase due to treatment chemical additions.
- ⁽³⁾ Unit costs are based upon the actual costs incurred in 1996 (\$55.28 per ton for soil excavation/handling/treatment). These costs have been adjusted for inflation to 2001 dollars.⁽⁵⁾
- (4) The unit cost of transport and disposal per current pricing quote (Spring 2002). Quote includes the current tipping fee of \$28 per ton for disposal as special waste.
- Adjustment for inflation based upon the U.S. Census Bureau Annual Implicit Price Deflator for 2001 (119.1 as of June 2002). The Implicit Price Deflator for 1996 is 100. Therefore, a cost adjustment factor of 119.1/100 = 1.191 has been applied.

Table C-5 F-Pond Remediation Cost Estimate Assuming sediment and soil are excavated, treated, and disposed of as special waste.

	Estimate Element	Estimated Cost
1.	Prepare final closure plans (including closure confirmation sampling plans).	\$6,000
2.	Dewatering (initial and during excavation).	\$8,000
3.	Sediment excavation, treatment, and disposal (4,865 CY). ⁽¹⁾	
 	a. Mobilization/demobilization, project management, excavation, screening, and in-situ treatment: 7,492 ⁽²⁾ treated tons at \$65.84 ⁽³⁾ per treated ton.	\$493,300
	 Transport and disposal as special waste: 7,492 treated tons at \$39.50⁽⁴⁾ per treated ton. 	\$296,000
4.	LDR treatment verification sample analysis (once per 200 CY, at \$175 per sample).	\$4,400
5.	Closure confirmation sample analysis.	\$6,000
6.	Engineering oversight and sample collection.	\$20,000
7.	Closure documentation reports.	\$10,000
	Total	\$843,700

- (1) Average depth of sediment assumed to be 1 ft over entire F-Pond area (approx. 175 ft x 750 ft).
- (2) Total tons of soil based upon a factor of 1.4 tons per CY, and 10% weight increase due to water and treatment chemical additions.
- (3) Unit costs are based upon the actual costs incurred in 1996 (\$55.28 per ton for soil excavation/handling/treatment). These costs have been adjusted for inflation to 2001 dollars. (5)
- (4) The unit cost of transport and disposal per current pricing quote (Spring 2002). Quote includes the current tipping fee of \$28 per ton for disposal as special waste.
- (5) Adjustment for inflation based upon the U.S. Census Bureau Annual Implicit Price Deflator for 2001 (119.1 as of June 2002). The Implicit Price Deflator for 1996 is 100. Therefore, a cost adjustment factor of 119.1/100 = 1.191 has been applied.